Electronic Synthesizer Techniques, MTEC 474a
Course Syllabus Fall 2023

Instructor:

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Office Hours: Tuesday by appointment

Goal:
The goal of this course is that each student—upon successful completion—gains a working knowledge of electronic synthesizers and the components of the synthesis process (oscillators, filters, envelope generators, etc.) for the creation, shaping, and design of sound.

Required Software:
Vital Audio's Vital (Spectral Warping Wavetable Synth) will be the primary tool for this class. Make an account and download the free version from http://vital.audio

MaxMSP (visual programming environment) - by Cycling '74 Download

Span (FFT spectrum analyzer) by Voxengo Download

Required Online Coursework:
syntorial.com Synthesis training software.
Syntorial includes a fully functional software synthesizer and training software. You must purchase this software on your personal computer to complete weekly homework exercises, assignments, and quizzes
Promo code: USCSYN (40% off, $77.99 is your price)

Hardware Requirements:
You must have headphones for every class! We strongly recommend the Sony MDR-7506 headphones or similar. They are the standard headphone for all MTEC and MUIN courses. You will need these headphones if you plan to take any other courses in these areas.

Bring your headphones to **EVERY MEETING** with a 1/4" adapter. Not having them will affect your ability to participate and, consequently, your participation score

Additional Resources:
Rick Schmunk has an excellent Serum course that can easily be adapted to learning Vital (they have many similarities). It's freely accessible through Trojan Learn - search for *Learning Serum.*

Course Outline • Syntorial Quiz Schedule

Date	Class Topic	Syntorial
8/22	Course Introduction: Vital, MaxMSP, Syntorial, Span	
8/29	Oscillators	1-3
9/5	Wavetables	4-6
9/12	Noise Oscillator	7-9
9/19	Filters	10-12
9/26	LFO	13-15
10/3	Envelopes and Modulation	16-18
10/10	Modulation Matrix and LFOs	19-21
10/17	Midterm Exam	1-21
10/24	Matrix and LFO	22-24
10/31	FX	25-27
11/7	Custom Wavetables and Samples	28-30
11/14	Gates and Arpeggiation - Modulation Sources	31-33
11/21	In-Class Final Exam Preparation	
	Final Exam Due Date TBA	

Requirements, Exams, and Grading Information
Student assessment in MTEC 474a will consist of in-class participation, weekly exercises, a mid-term, and a final project. Unless otherwise noted, all exercises are due one week from the date assigned.

Students must keep up with the weekly reading assignments and exercises before the next class session.

This course is being offered in an in-person modality. Please be attentive to the class attendance policy. Remote attendance will not be considered unless I receive a directive from the Office of Student Accessibility Services. However, if on any day you are ill or have symptoms consistent with COVID-19, stay home. In that case, contact me to make up work or otherwise maintain continuity with the course.

All assignments must be turned in to the class DropBox, accessed through Blackboard, and carefully follow file naming conventions, file management, and format guidelines.

Assignments must also be brought to class each week and available for in-class demonstrations and collaborative exercises

Grade Breakdown:

> Participation 10%
> Assignments & Quizzes 10%
> Patches 30%
> Midterm Exam 20%
> Final Exam 30%

Communication and Online Materials:
Please make it a habit to check your USC email. If you do not regularly use that account, ensure you have it forwarded to the account you use. Any emails I send to the class will use the USC email account. All course materials, including slides, audio examples, handouts, assignments, and class grades, will be available on Blackboard (https://blackboard.usc.edu). Be sure to check Blackboard if you have to miss a class. You are responsible for any materials presented and assignments made, even if you are not in class that day.

Sharing of course materials outside of the learning environment
USC has a policy that prohibits sharing synchronous and asynchronous course content outside of the learning environment. Please do not share or otherwise distribute class materials, music scores, or recordings produced by me or any students in the conduct of this course without permission.

SCampus Section 11.12(B)

Distribution or use of notes or recordings based on university classes or lectures without the express permission of the instructor for purposes other than individual or group study is a violation of the USC Student Conduct Code. This includes, but is not limited to, providing materials for distribution by services publishing class notes. This restriction on unauthorized use also applies to all information, which had been distributed to students or in any way had been displayed for use in relationship to the class, whether obtained in class, via email, on the Internet or via any other media. (SeeSection C.1 Class Notes Policy).

Zoom etiquette
If applicable, I expect you to demonstrate your presence and participation in class by your being on camera in all Zoom sessions. If you will be unable to keep your camera on during the synchronous Zoom session, please contact me prior to the class session to discuss.

USC technology rental program
We realize that attending classes online and completing coursework remotely requires access to technology that not all students possess. If you need resources to successfully participate in your classes, such as a laptop or internet hotspot, you may be eligible for the university's equipment rental program or other assistance. To apply, please submit an application on the Student Basic Needs portal.

USC Technology Support Links
Zoom information for students
Blackboard help for students
Software available to USC Campus

Academic Conduct
Plagiarism – presenting someone else's ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in SCampus in *Part B, Section 11, "Behavior Violating University Standards"* policy.usc.edu/ scampus-part-b. Other forms of academic dishonesty are equally unacceptable. See additional information in SCampus and university policies on scientific misconduct, policy.usc.edu/scientific-misconduct.

Support Systems
Counseling and Mental Health - (213) 740-9355 – 24/7 on call
studenthealth.usc.edu/counseling
Free and confidential mental health treatment for students, including short-term psychotherapy, group counseling, stress fitness workshops, and crisis intervention.

National Suicide Prevention Lifeline - 1 (800) 273-8255 – 24/7 on call
suicidepreventionlifeline.org
Free and confidential emotional support to people in suicidal crisis or emotional distress 24 hours a day, 7 days a week.

Relationship and Sexual Violence Prevention Services (RSVP) - (213) 740-9355(WELL), press "0" after hours – 24/7 on call
studenthealth.usc.edu/sexual-assault
Free and confidential therapy services, workshops, and training for situations related to gender-based harm.

Office of Equity and Diversity (OED) - (213) 740-5086 | Title IX – (213) 821-8298
equity.usc.edu, titleix.usc.edu
Information about how to get help or help someone affected by harassment or discrimination, rights of protected classes, reporting options, and additional resources for students, faculty, staff, visitors, and applicants.

Reporting Incidents of Bias or Harassment - (213) 740-5086 or (213) 821-8298
usc-advocate.symplicity.com/care_report

Avenue to report incidents of bias, hate crimes, and microaggressions to the Office of Equity and Diversity |Title IX for appropriate investigation, supportive measures, and response.

The Office of Disability Services and Programs - (213) 740-0776
dsp.usc.edu
Support and accommodations for students with disabilities. Services include assistance in providing readers/notetakers/interpreters, special accommodations for test taking needs, assistance with architectural barriers, assistive technology, and support for individual needs.

USC Campus Support and Intervention - (213) 821-4710
campussupport.usc.edu
Assists students and families in resolving complex personal, financial, and academic issues adversely affecting their success as a student.

Diversity at USC - (213) 740-2101
diversity.usc.edu
Information on events, programs and training, the Provost's Diversity and Inclusion Council, Diversity Liaisons for each academic school, chronology, participation, and various resources for students.

USC Emergency - UPC: (213) 740-4321, HSC: (323) 442-1000 – 24/7 on call
dps.usc.edu, emergency.usc.edu
Emergency assistance and avenue to report a crime. Latest updates regarding safety, including ways in which instruction will be continued if an officially declared emergency makes travel to campus infeasible.

USC Department of Public Safety - UPC: (213) 740-6000, HSC: (323) 442-120 – 24/7 on call
dps.usc.edu
Non-emergency assistance or information.