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Course Description

Non-Linear MIDI Sequencing is an in-depth course focusing on the principles and techniques of sequencing and performing musical compositions using a non-linear sequencer. Discussions will also include the study of subtractive and FM synthesis; computer-based drum, instrumental and vocal part creation and production; mixing and arranging repetitive musical structures; and applications to Live Performance.

Course Objectives

Students will learn to sequence/record, arrange and mix their musical compositions. As part of the process students will learn to compose effective drum grooves, bass lines, and keyboard parts, as well as, how to apply effects processing including EQ, compression, side-chain processing, reverb and delay effects. Students will also learn to effectively layer and orchestrate drum and instrumental sounds and build effective arrangements.

Requirements, Assignments, Exams and Grading Information

Student assessment in MTEC 444 will consist of short exercises, quizzes and a final project. Unless otherwise noted, all exercises are due one week from the date assigned. All assignments are to be turned in to the class dropbox folder, accessed through BlackBoard, and must carefully follow file naming conventions, file management and format guidelines.

It's extremely important that you keep up with the weekly asynchronous video assignments before the next class session. If you haven't done so already, set up a free USC **LinkedIn Learning** account: https://itservices.usc.edu/linkedin-learning/

The final project will consist of a sequence of 15-20 musical parts, approximately 65 measures in length. Students can choose to sequence an original song or a preexisting composition subject to the instructor's approval. Further instructions will be available at a later date.

Weekly assignments are due by the beginning of the class period as indicated on Blackboard. Assignments turned in after the deadline will be marked late and penalized 10% for that day as well as 10% for each additional day or portion of a day that they are late. Allow for slow Internet connections and server upload time so that your files are completely uploaded before the deadline. The Final Project may not be submitted late.

Final projects not turned in by the deadline will receive a grade of zero.

Throughout the semester, questions about your grades should be addressed immediately. Do not wait until the semester has ended to resolve a grading issue.

Required Software:

Ableton Live (10.1.14) Suite

Ableton will offer complimentary full functioning free demos for the duration of the semester to students in classes where Live Suite is the primary DAW

Ableton Live Suite EDU purchase: $449 ($74.83 for 6-months)

Web link: https://www.ableton.com/en/shop/education/

Required Hardware:

You must have reference headphones or monitors. The department STRONGLY recommends the Sony MDR-7506 headphones or similar. They are the standard headphone for all MTEC and MUIN courses. If you plan to take any other courses in these areas, you will need reference headphones. Additionally, I recommend these options:

Beyerdynamic DT 770 PRO 250 ohm Closed-back Studio Mixing Headphones

Focal Spirit Professional headphones

Helpful Resource - Sweetwater's Headphone Buying Guide

Suggested Hardware:

MIDI keyboard, USB microphone or audio interface, mic cable and

Microphone. Refer to Thornton-Music Technology Purchase Options document on Blackboard for EDU discounts.

Grading Summary

1. Participation   10%
2. Exercises   35%
3. Quizzes   10%
4. Final Exam   15%
5. Final Project   30%

Additional Class Resources

Schmunk, Rick. *Ableton Live 10 Essential Training*. In Learning (2018).

Schmunk, Rick. *Up and Running with Ableton Analog* (2016). (Recommended)

Shepard, Brian. *Refining Sound*. Oxford Press (2013). (Recommended)

Snoman, Rick. *Dance Music Manual* (4th Edition). Focal Press (2019). (Recommended)

Communication

Please make it a daily habit to use/check your USC E-mail account. Any E-mails I send to the class will use that account. ***Please add "MTEC 444" in the subject header** of all emails that you send me*** This will help to organize all the emails that I receive and

respond more quickly. In addition, all course materials and class grades will be posted on BlackBoard (http://blackboard.usc.edu).

Schedule

Week 1 (8/18) – **Getting started: Ableton Live 10 Suite**
        Installing, running and configuring Live 10
        Audio interface, sound cards, and audio drivers
        MIDI controllers and peripherals
        Setting preferences: Sample Rate, Bit Depth, Waveform, Audio File Formats
        Buffer settings and latency
        File management and Project assets
        Activating plugins and plugin folders
        Browser, Info and Help View
        Organization, Navigation and Show/Hide options
        Importing Audio Loops
        Triggering clips and scenes: Session View
        Key Map Mode
        Saving Live Sets (Collect all and Save)
        Reading: Lecture Notes
        Week 1 Video Playlist

Week 2 (8/25) – **Workflow Overview: Session and Arrangement**
        Standard approach to making music in Live (Create, Record, Finalize)
        Linear vs. Non-Linear Sequencing
        Session vs Arrangement Views Basics
        Clip Functionality (Session versus Arrangement)
        Mixer sections, sub parameters and corresponding controls
        Control Bar, Transport
        Tempo, meter, metronome and count-in
        Loading Live Devices
        Recording from Session to Arrangement
        Move clips, scenes, song sections between Session and Arrangement Views
        Back to Arrangement button
        Arrangement editing (Edit functions)
        Exporting Audio
        Week 2 Video Playlist
        Assignment: Exercise 01: Workflow Overview
        Quiz #1

Week 3 (9/01) - **MIDI Recording and Editing**
        Manual control setup (Track, Sync, Remote settings)
        Setting MIDI: preferences, track inputs/outputs
        Instantiating software instruments
        Impulse Drum Instrument

Pencil tool note entry, create empty MIDI clips
Real time MIDI recording – Computer MIDI Keyboard
MIDI keyboard controller setup
Edit MIDI velocity, duration, quantization, delete notes
Edit clip length, loop clips
Copy/paste and clips
Create basic drum set patterns
Reading: Lecture Notes
Week 3 Video Playlist
Assignment: Exercise 02

Quiz #2

Week 4 (9/08) – **Intro to Drum Programming**
Intro to Drum Racks
Intro to Simpler (sample player)
Programming: Kick and snare
Drum signal processing
Chain List/Mixer Fold button
Recording MIDI (Session View)
Session Record button
Drum pattern arranging
Introduction to groove quantization
Reading: Lecture Notes
Week 4 Video Playlist
Exercise 03: Creating Drum Parts Using Multi-Sample Drum Racks

Week 5 (9/15) - **Bass Programming: Intro to Subtractive Synthesis**
Wave shapes and harmonic content
Oscillator tuning
Filters and timbre
ADSR envelopes and filter and amplitude modulation
LFO modulation and recurring change
Creating Bass parts
Bass lines: rhythmic patterns and relationship to the kick drum
Reading: Lecture Notes
Supplemental Reading: *Refining Sound* Ch. 4, 5 and 6
Week 5 Video Playlist
Exercise 04: Drum Racks and Subtractive Synthesis

Quiz #3

Week 6 (9/22) - **Building Harmonies/Melodies with Instrument Racks**
Racking Instruments and Devices
Layered signal processing
MIDI Map Mode vs instant Control Surface Mapping

Chain Select Zones
Assigning parameters to Rack Macros
Min/max controller settings
Arpeggiator, Chord, Pitch and other MIDI devices
Keyboard splits and velocity layered zones
Manage and save device presets
Device and Content Hot-Swap
Arrangement Automation
Reading: Lecture Notes
Week 6 Video Playlist
Exercise 5: Original Sequence (Due Week 8)

Week 7 (09/29) – **Manipulating Audio Clips**
Clip View: Sample Box
Segment BPM
Warp Modes
Setting and Editing Warp Markers
Transposing Pitch
Corrective vs Creative Warping
Clip Envelopes for parameter manipulation
Automation vs Modulation
Linked and Unlinked Envelopes
Quantizing Audio
Groovy Groove Pool
Reading: Lecture Notes
Week 7 Video Playlist
Exercise 5: Original Sequence (Due Week 8)

Week 8 (10/06) - **In class student presentations and feedback** (Exercise 5)

Week 9 (10/13) - **Recording Audio**
Audio preferences – Sample Rate/Bit Depth
Buffer Size adjustments and latency
Reduce Latency when Monitoring option
Driver Error Compensation
Audio path signal flow and routing
Audio I/O, setting levels, headroom
Recording in Session View
Recording in Arrangement View
Punch In/Out
Resampling
Reading: Lecture Notes
Week 9 Video Playlist
Exercise 6: Audio Loop Sequence
Final Project Discussion

Week 10 (10/20) - **Developing the Arrangement**
        Recording Automation
        Midi and Key Mapping
        Identify and create drops, risers and build transitions
        FX transitions
        Enhancing transitions with signal processing
        Placing transitions
        Developing the arrangement
        Week 10 Video Playlist
        Exercise 7: Sequence with Transitions
        Quiz #4

Week 11 (10/27) - **Mixing in Live**
        Session organization
        Naming and color coding
        Track groups/Sub-mixes
        Insert vs Auxiliary Effects
        Sends and Returns
        Creating balance and depth
        Creating clarity and interest
        Bit reduction, beat repeat, amp simulation and other unusual processing options
        Week 11 Video Playlist
        Exercise 8: Mixing

Week 12 (11/03) - Guest Speaker – Live, Live
        Launch parameters
        Follow Actions
        Controller setups
        Designing performance integration

Week 13 (11/10) – TBA

Final Exam - The exam will be available on Tuesday, 11/17 from 8AM until Tuesday, 11/24 11:59PM (PT). Not accepting late submissions**.**

11/24: Final Project Due by 11:59PM (Pacific Time)

Disabilities

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.-5:00 p.m. Monday through Friday. The phone number for DSP is 213/740-0776.

Synchronous session recording notice
As required by USC, the synchronous sessions for this course will be recorded and provided to all students asynchronously. This policy does not apply to individual lessons.

Sharing of course materials outside of the learning environment
USC has a policy that prohibits sharing of any 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 expressed 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
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.