Non Linear MIDI Sequencing, MTEC 444
Course Syllabus Spring 2017

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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, 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 folder on the music technology lab server and must carefully follow file naming conventions, file management and format guidelines.

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.

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

Class Texts
Hanley, Joe. Syntorial. syntorial.com (Recommended)

**Supplementary Materials**
1. Headphones (Sony, MD 7506 required)
2. USB Memory Stick and/or other external storage device

**Communication**
Please make it a habit to use/check your USC email account. Any emails I send to the class will use that account. In addition all course materials and class grades will be posted on BlackBoard ([http://blackboard.usc.edu](http://blackboard.usc.edu)). For example, the course syllabus can be found under Syllabus and class notes under Content.

**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.

**Schedule**

Week 1 (1/10), Linear vs. Non-Linear Sequencing
- Introduction to Ableton Live
- Live’s Session View
- Triggering clips and scenes
- The browser
- Info and Help View
- Device and Clip View
- Reading: Lecture Notes
- Lynda: *Ableton Live 9 Essential Training* chapter 3
- Exercise: Intro to Live (do not turn in to the server)

Week 2 (1/17), MIDI Recording and Editing (Arrangement View)
- MIDI keyboard controller setup
- Setting MIDI inputs and outputs
- Auditioning sounds
- Loading software instruments
- Impulse drum plug-in
- Impulse multi-output setup
- Creating empty clips, pencil tool note entry
- Setting tempo and meter, click and count-in setup
- Real time recording
- MIDI Editing: velocity, duration, quantization, delete notes, clips
- Setting the loop length
Copy/paste notes and clips
Using/setting locators
Basic drum set patterns
Track grouping
Reading: Lecture Notes
Lynda: *Ableton Live 9 Essential Training* chapters 5 and 6
Exercise: MIDI Recording and Editing

**Week 3 (1/24), Drum Set Production**
Intro to Simpler (sample player)
Intro to drum racks
Nested racks, creating a multi-sample drum set preset
Intro to groove quantization
Choke groups, drum rack sends and other drum rack parameters
Reading: Lecture Notes, *Refining Sound* chapter 4, *Dance Music Manual* chapter 1
Lynda: *Ableton Live 9 Essential Training* chapter 16 (#1-6), 20 (1-3), and 6 (#4)
Exercise: Creating drum parts, Intro to Simpler

**Week 4 (1/31) Creating Bass parts**
Introduction to subtractive synthesis
Side chain processing
Filter modulation (filter sync)
Instrument Racks II: doubling and layering bass sounds
Introduction to graphic automation
Bass lines: style, note choice and voice leading considerations
Bass lines: rhythmic patterns and relationship to the kick drum
Reading: Lecture Notes, *Refining Sound* chapters 3, 5 and 6, *Dance Music Manual* chapter 20
Lynda: *Ableton Live 9 Essential Training* chapter 10 (#1 and 6), 13 (#3), *Up and Running with Ableton Analog* chapters 1 and 2
Exercise: Verse and Chorus Sequence I (Due Week 6)

**Week 5 (2/07), Instrumental Production I**
Lead and plucked keyboard parts
Arpeggiators, step sequencers and other MIDI plug-ins
Introduction to MIDI mapping
Continuous controllers
Recording clip automation (real-time)
Reading: Lecture Notes, *Refining Sound* chapters 7-9, *Dance Music Manual* chapter 21
Lynda: *Ableton Live 9 Essential Training* chapter 11, 13 (#3)

**Week 6 (2/14), Instrumental Production II**
Keyboard pad parts
Advanced instrument racks
Advanced sound layering
Key, velocity and chain zone mapping
Device racks in-depth
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Reading: Lecture Notes, Dance Music Manual 22 and 23
Lynda: Ableton Live 9 Essential Training chapter 17
Exercise: Verse and Chorus Sequence II (Due Week 8)

Week 7 (2/21), Intro to FM Synthesis
Intro to FM synthesis
Intro to Operator
Rack Macros; Key and MIDI mapping
Reading: Lecture Notes, Dance Music Manual chapter 24 and 25
Lynda: Up and Running with Ableton Operator chapters 1 and 2

Week 8 (2/28), Working in Session View
Real time recording
Clip editing in Session view
Setting the loop length
Copy/paste notes, clips and scenes
Consolidate Time to New Scene (Arrange View)
Session to Arrangement view recording
Launch parameters, Follow Actions
Review key mapping
Introduction to clip automation (graphic)
Clip automation in Session view
Reading: Lecture Notes
Lynda: Ableton Live 9 Essential Training chapter 8, 13
Exercise: Working in Arrangement view

Week 9 (3/07), Recording and Warping Audio
Audio preferences
Audio I/O, setting levels
Headphone cues
Intro to recording audio
Intro to warping audio
Editing and quantizing audio
Sample properties and parameters
Launch properties and parameters
Reading: Lecture Notes, Dance Music Manual 14
Lynda: Ableton Live 9 Essential Training chapter 7, 14
Exercise: Audio Loop Sequence

Week 10 (3/21), Developing the Arrangement
Working with repetitive musical structures
Breaks, rises and drops
Reading: Dance Music Manual chapter 18 and 19
Exercise: Sequence with Transitions

Week 11 (3/28), Vocal Arranging and Processing
Vocal compression
Vocal EQ
Automation and delay techniques
Vocoder and other specialized vocal effects
Exercise: Vocal processing

Week 12 (4/04), Mixing in Live
Creating balance and depth
Creating clarity and interest
Delay best practices and techniques
Reverb best practices and techniques
Bit reduction, beat repeat, amp simulation and other unusual processing options
Reading: Lecture notes
Exercise: Mixing and Time Based Effects

Week 13 (4/11), Live Performance I
Guest Speaker
Lynda: Ableton Live 9 for Live Performance chapter 1, 3

Week 14 (4/18), Live Performance II
Guest Speaker
Lynda: Ableton Live 9 for Live Performance chapter 6, 7

Week 15 (4/25), Final Project Work Session

5/02: Final Project Due 10pm

5/04: Final Exam 2-4pm

*** Important Note! CSS G-147 will be closed as of 8pm on 5/02. There will be no open lab time after that date. There will be no exceptions to this policy. Please plan accordingly.