

# MUSIC [XXXX]: Music Theory for Producers

Joshua Biggs | [jmb834@cornell.edu](mailto:jmb834@cornell.edu) | [Office 130] | [Office Hours by appointment]  
[Fall, 2023] [Tuesday, Thursday] | [11:40 - 12:55pm] | [Lincoln Hall B21]

---

## Course Description:

*Music Theory for Producers* provides a hands-on comprehensive survey of Western art music theory concepts essential for the creation and production of popular electronic music. In addition to exploring the inner workings of beats, melodies, chord progressions, arrangements, and song structures, students will develop fluency in the fundamental skills of electronic music composition, including studio recording, sampling, synthesis, and mixing. Regular stem-sharing assignments and creative problem-sets will culminate toward the composition of a collaborative class EP. Students from any discipline are welcome, and no formal musical training is required.

## Learning Goals and Objectives:

You will learn ...

- to approach listening as an active, analytical practice.
- how to apply digital tools to advance your understanding of music theory concepts.
- how pitch, rhythm, harmony, and form function and interact with one another in pop music.
- how to compose effective drum loops, catchy hooks, and expressive chord progressions.
- how to record, sample, manipulate, and mix audio using Ableton Live software.
- how to design unique sounds from scratch, using a combination of analog and digital synthesis.

## Course Structure & Grading Policy:

Your learning will be assessed through weekly Stem Assignments, Unit Problem Sets, and a Final Project. The course includes five three-week units, each focusing on one of the five basic elements of music—Rhythm, Melody, Harmony, Texture, and Form. All due dates for all graded assignments are included in the syllabus at the beginning of the semester, and while these may shift during the course of the semester, please note they are designed so that assigned work can be used as material for activities *that same day*. If you require extra time, or feel like you are falling behind, please let me know so that we can work together to find a solution.

### Attendance, Engagement, and Preparation: (10%)

Attendance is mandatory, and more than two unexcused absences will negatively affect your grade. While active and enthusiastic participation in class discussions and group activities will help you and your colleagues benefit the most from the course, please always also be mindful of sharing space with others.

### Stem Assignments: (20%)

During the semester, you will complete 10 Stem Assignments, reflecting skills and concepts learned in class workshops. *You may resubmit work for a higher grade upon receiving feedback.*

### Unit Problem Sets: (40%)

At the end of each of the first four units, you will undertake a small creative project with strict design specifications, designed for you to demonstrate and apply your understanding of the concepts and techniques acquired.

### Final Project: (30%)

Produce an entire track (between 2-3 minutes) from scratch, applying all the music theory concepts and production techniques you have acquired over the semester.

---

## Unit 1: Rhythm

Week	Date	Topic
1	08/22	<b>Introduction and Overview:</b> Syllabus and Software; Introduction to Ableton Live Lite
	08/24	<b>Workshop #1: The Loop</b> Subdivisions of the Pulse (Group Exercise) ; Dragging and Dropping Clips on the Timeline (Individual Exercise) ; Lines and Layers: Kicks, Snares, and Hats (Group Exercise) ; Building a Loop (Individual Exercise)
2	08/29	<b>Workshop #2: The Groove</b> Synchronicity, Syncopation, Subversion: Downbeats, Upbeats, and Offbeats (Group Exercise); Genres in Motion: The <i>Clave</i> as Case Study (Discussion); Sampling Rhythms from Songs by Ear (Individual Exercise)
	08/31	<b>Workshop #3: The Kit</b> Introduction to Sampling : DIY Kits (Individual Exercise); Unit #1 Problem Set Brief ; Building Unit #1 Beats (Individual Exercise)
3	09/05	<b>Lecture #1: The Science of Suspense</b> Entrainment and Enculturation ; Predictability and Conformity: The Wundt Curve and Cultural Identity ; All Surprises Are Bad: David Huron's Aesthetics of Pessimism.
	09/07	<b>Unit #1 Problem Set Presentations: What's in a Stem?</b> Presentations and Feedback

## Unit 2: Melody

Week	Date	Topic
4	09/12	<b>Workshop #4: Intervals, Scales, Modes</b> The Pencil Tool: Drawing Notes (Group Exercise) ; Patterns of 1s and 2s (Discussion) ; Hierarchies and Tendencies (Discussion); Transpositions (Individual Exercise)
	09/14	<b>Workshop #5: An Introduction to Writing Melodies</b> The Anatomy of Melody: Contour, Range and Register (Discussion): Humming Transcription (Group Exercise) ; Song Transcription (Individual Exercise)
5	09/19	<b>Workshop #6: Basslines</b> All About the Bass (Individual Exercise); Direction: Familiarity and Novelty (Discussion); Motifs and Variation Patterns: Sequence, Rotation, Inversion (Individual Exercise)
	09/21	<b>Workshop #7: Leads</b> Introduction to Subtractive Synthesis : DIY Leads (Individual Exercise) ; Unit #2 Problem Set Brief ; Building Unit #2 Stems (Individual Exercise)
6	09/26	<b>Lecture #2: Musical Motion: Through and Beyond Metaphor</b> Who and What is Moving How and Where? ; Mimetic Engagement and Subvocalization ; Steve Larsen's Three Laws: Gravity, Inertia, Magnetism ; Trevor Wishart's Natural Morphologies ; David Huron's Regression to the Mean
	09/28	<b>Unit #2 Problem Set Presentations: Theme &amp; Variations</b> Presentations and Feedback

## Unit 3: Harmony

Week	Date	Topic
7	10/03	<b>Workshop #8: Chords and Colors</b> Putting Two and Two Together : Vertical vs. Horizontal Thinking (Discussion); Patterns of 3s and 4s (Individual Exercise) ; Color and Crunch: Extension and Suspension

	10/05	<b>Workshop #9: Related Chords and Harmonic Progression</b> Getting from A to B: Conventionally Related Chords (Discussion) ; Inversions ; Substitutions and Modulations ; The Cadence (Individual Exercise)
8	10/10	<b>Workshop #10: Melody &amp; Accompaniment</b> Harmonizing Melodies and Articulating Harmonies (Individual Exercise) ; What's in a Phrase? (Group Exercise) ; Countermelody and Polyphony
	10/12	<b>Workshop #11: Strings &amp; Pads</b> Introduction to FM Synthesis : DIY Strings & Pads (Individual Exercise) ; Unit #3 Problem Set Brief ; Building Unit #3 Stems
9	10/17	<i>Fall Break</i>
	10/19	<i>Fall Break</i>
10	10/24	<b>Field Trip: Pulling Out All the Stops:</b> A Visit to the <a href="#">Wayne and Diana Murdy Family Organ</a>
	10/26	<b>Unit #3 Problem Set Presentations: Pulling on Heartstrings</b> Presentations and Feedback

## Unit 4: Texture

Week	Date	Topic
11	10/31	<b>Workshop #12: Spectral Analysis</b> Introduction to EQ and Filters (Group Exercise) and Automation ; Introduction to SPEAR Audio Analysis and Editing Software (Individual Exercise)
	11/02	<b>Workshop #13: Audio Manipulation</b> Compressors, Reverbs, Delays (Individual Exercise) ; Building Analog Equivalents (Group Exercise)
12	11/07	<b>Workshop #14: Signal Flows</b> Sends, Returns, Sidechaining, Shadow Automation
	11/09	<b>Workshop #15: Mixing</b> Everything in its Right Place: The Lead, the Bass, the Pads, the Kit ; Groups,
13	11/14	<b>Lecture #4: A History of Synthesis</b> Telharmonium ; Early European Centers ; Early US Centers ; Moog & Carlos, Buchla and Ciani ; Éliane Radigue ; John Chowning & Miller Puckett
	11/16	<b>Unit #4 Problem Set Presentations: Setting the Scene</b> Presentations and Feedback

## Unit 5: Form

Week	Date	Topic
14	11/21	<b>Workshop #15: Altogether Now</b> Building Larger Structures with Stems (Group Exercise) ; Strophic and Through-Composed Forms ; The American Songbook Model: Intro, Verse, Chorus, Bridge, Outro (Discussion)
	11/23	<i>Thanksgiving Break</i>
15	11/28	<b>Lecture #5: Lecture #4: Spectromorphology</b> Dennis Smalley's Gestural Surrogacy ; Trevor Wishart's Modulating Modulations
	11/30	<b>Workshop #16: Remix and Collaboration</b> Stem Swap (Group Exercise) ; Songwriting Workshop
16	12/05	<b>Final Project Presentations</b>
	11/07	Presentations and Feedback ; EP Listening Party