

Subject to Change

Daily Schedule

Updated: 4/15/25

1. Introduction

WEEK 1

Mon., Jan. 13

Course Introduction

Reading:

- Critchlow, *Quadrivium* (Critchlow 2010)
- Euclid's *Elements* (Fitzpatrick 2008)

Wed., Jan. 15

Visualizing Musical Structure

Fri., Jan. 17 – A

Assignments/Activities: (Due: Wed., Jan. 22, 10:50 am)

- **Quiz 1a:** Quadrivium
- **Quiz 1b:** Euclid's Elements
- **Activity #1:** Harmony of the Spheres

WEEK 2

Mon., Jan. 20

M.L.K. Day of Service

2. The Geometry of Pitch

Wed., Jan. 22

NO CLASS (due to weather)

Reading:

- Hearing With Our Eyes: The Geometry of Tonal Space, pp. 123-126 (Hook 2002)

Fri., Jan. 24 – A

Assignments/Activities: (Due: Mon., Jan. 27, 10:50 am)

- **Activity #2:** Mathematics: The Science of Patterns

WEEK 3

Mon., Jan. 27

One-Dimensional Representations

Reading:

- Hearing With Our Eyes: The Geometry of Tonal Space, pp. 126-134 (Hook 2002)

Wed., Jan. 29

Two-Dimensional Representations; Chords & Keys

Fri., Jan. 30 – A

Assignments/Activities: (Due: Mon., Feb. 3, 10:50 am)

- **Quiz 2:** One-Dimensional Representations
- **Quiz 3:** Two-Dimensional Representations; Chords & Keys
- **Activity #3:** Cymatics

WEEK 4

Mon., Feb. 3

Pitch-Class Set Theory

Reading:

- Brian J. McCartin, Prelude to Musical Geometry, pp. 354-360 (McCartin 1998)

Wed., Feb. 5

Symmetry

Fri., Feb. 7 – A

Assignments/Activities: (Due: Mon., Feb. 10, 10:50 am)

- **Quiz 4:** Prelude to Musical Geometry (McCartin 1998)
- **Activity #4:** Symmetry

WEEK 5	
Mon., Feb. 10	<i>Five Components of Tonality</i> Reading: <ul style="list-style-type: none">Dmitri Tymoczko, Five Components of Tonality, from <i>A Geometry of Music</i> (Tymoczko 2011, pp. 3-7)
Wed., Feb. 12	<i>Scale Theory 1</i>
Fri., Feb. 14 – A	Assignments/Activities: (Due: Mon., Feb. 17, 10:50 am) <ul style="list-style-type: none">Quiz 5: Five Components of TonalityActivity #5: What Makes Music Sound ‘Good’?
WEEK 6	
Mon., Feb. 17	<i>Scale Theory 2</i> Reading: <ul style="list-style-type: none">Dmitri Tymoczko, Musical Objects (OPTIC), from <i>A Geometry of Music</i> (Tymoczko 2011, pp. 35-40)
Wed., Feb. 19	<i>OPTIC</i>
Fri., Feb. 21 – A	Assignments/Activities: (Due: Mon., Feb. 24, 10:50 am) <ul style="list-style-type: none">Activity #6: Music and Color – <i>Optional</i>

MIDTERM EXAM¹

3. The Geometry of Rhythm

WEEK 7	
Mon., Feb. 24	<i>Midterm Research Project Discussion Day</i> Reading: <ul style="list-style-type: none">Godfried T. Toussaint, "The Rhythm that Conquered the World: What Makes a 'Good' Rhythm Good?" (Toussaint 2011, pp. 1-5)
Wed., Feb. 26	<i>Rhythmic Timelines</i>
Fri., Feb. 28 – A	Assignments/Activities: (Due: Mon., March 3, 10:50 am) <ul style="list-style-type: none">Quiz 6: TimelinesActivity #7: Repetition & Musicality
WEEK 8	
Mon., March 3	<i>Distinguished Timelines</i> Reading: <ul style="list-style-type: none">Godfried T. Toussaint, "The Rhythm that Conquered the World: What Makes a 'Good' Rhythm Good?" (Toussaint 2011, pp. 5-13)
Wed., March 5	<i>Timeline Properties & Analysis</i>
Fri., March 7 – A	Assignments/Activities: (Due: Wed., March 19, 10:50 am) <ul style="list-style-type: none">Quiz 7a: Distinguished TimelinesQuiz 7b: Timeline PropertiesActivity #8: Properties of Rhythmic Loops

¹ The Midterm Exam will be posted on Wed., Feb. 19. The Midterm Exam is due Mon., Feb. 24, 10:50 am.

WEEK 9
Spring Break

4. Exploring Musical Spaces

WEEK 10

Mon., March 17 *Neo-Riemannian Theory*

Reading:

- Bryn Hughes, Neo-Riemannian Triadic Progressions, in *Open Music Theory*, Version 2 (Hughes 2023)

Wed., March 19 *Chains, Cycles & Spaces*

Fri., March 21 – A **Assignments/Activities:** (Due: Mon., March 24, 10:50 am)

- **Quiz 8a:** Neo-Riemannian Theory
- **Quiz 8b:** Chains, Cycles & Spaces
- **Activity #9:** Negative Harmony

WEEK 11

Mon., March 24 *Transformational Analysis*

Wed., March 26 *Final Presentation Discussion Day*

Fri., March 28 – A **Assignments/Activities:**

- **Activity #10:** Graphic Music Analysis – *Optional*

MIDTERM RESEARCH PROJECT

Due Fri., March 28, 11:59 pm

5. Special Topics

WEEK 12

Mon., March 31 *Mathematics and the Twelve-Tone System*

Reading:

- Brian Evans, Number as Form and Content (Evans 1992, 303-306)

Wed., April 2 *Fibonacci Numbers and the Golden Section*

Fri., April 4 – A **Assignments/Activities:** (Due: Mon., April 7, 10:50 am)

- **Quiz 9a:** P, L & R Calculations
- **Quiz 9b:** P', L' & R' Calculations
- **Quiz 10:** Number as Form and Content (Evans 1992)
- **Activity #11:** Pattern-Free Music

WEEK 13

Mon., April 7 *Fractal Music*

Reading:

- Stephen Ornes, Hunting fractals in the music of J.S. Bach (Ornes 2014)
- Harlan Brothers, The Fractal Structure of Coltrane's Iconic Solo (Brothers 2022)

Wed., April 9 *Final Presentation Consultation Day 1*

Fri., April 11 – A **Assignments/Activities:** (Due: Mon., April 14, 10:50 am)

- **Quiz 11:** Hunting Fractals in Bach & Coltrane (Ornes 2014 & Brothers 2022)
- **Activity #12:** Bach & Fractals

6. Student Research

WEEK 14

Mon., April 14 *Final Presentation Consultation Day 2*

Wed., April 16 *Student Presentations: Day 1*

Fri., April 11 – A **Assignments/Activities:**
• **Activity #13:** Geometries of Pitch and Time in Music

WEEK 15

Mon., April 21 *Student Presentations: Day 2*

Wed., April 23 *Student Presentations: Day 3*

Fri., April 25 – A **Assignments/Activities:**
• **Activity #14:** Musical Rhythm through the Lens of Computational Mathematics

WEEK 16

Mon., April 28 *Student Presentations: Day 4*

Final Presentation: Reflections and File Submission

(Due Wed., 4/30, 11:59 pm)

FINAL EXAM²

² The online Final Exam will be posted on Wed., 4/30. The exam is due Mon., 5/5, at noon.