

Study Guide

The History of Classical Music Pythagoras through Beethoven

Lecture 1

The Development of Music

Suggested Musical Pieces

- Johann Sebastian Bach, *The Well-Tempered Clavier Book I*: Prelude and Fugue No. 3 in C-sharp Major

Outline

0:00-13:15 — Classical Music: Its Definition and Origins

- Classical music refers to the movement of Western art music that blossomed during the Baroque Era.
 - The 88 notes of the modern piano provide the foundation for classical music and numerous other western music forms, such as jazz, classic rock, and musical theatre.
 - Music's "classical" period lagged significantly behind other western art forms (such as poetry and architecture) because it took over two millennia to figure out the proper way to tune a keyboard.
- Pythagoras is credited with discovering the science of music.
 - He discovered that strings, when plucked, vibrate at a fixed rate and project a sound. A change in the length of the string changed the rate at which it vibrated, and made it produce a different pitch.
 - Pythagoras applied this principle using simple ratios for the strings and discovered many basic harmonies of music: the octave (2:1), the fifth (3:2), and the fourth (4:3).
 - With this work, Pythagoras and his followers discovered what would become the seven white notes on the modern piano (A-G).
- Pythagoreans stopped at the seven white notes because going further required working with irrational numbers, which violated their pagan beliefs about how the universe was divinely ordered.

13:16-19:14 — Musical Notation

- Christianity allowed for irrational numbers, but there was still no standardized notation for music.
- Charlemagne, the first Holy Roman Emperor, along with his father Pepin the Short, simplified monks' chants to a single note at a time to make it easier for everyone to learn.
- Guido of Arezzo, an Italian monk, invented sheet music to teach Gregorian Chant. He named the pitches, which we now call "Do, Re, Me, Fa, Sol, La, Ti," and drew a staff to mark the proper pitch for each note. Clefs were added to allow the different vocal ranges—alto, treble, and bass—to follow their parts more easily. Sharp and flat symbols were added to remind musicians to raise or lower the pitch of specific notes when needed to fit the proper intervals in certain scales.

19:15-30:00 — The Emergence of Classical Music

- As music became more standardized, musicians began to grapple with the impossibility of tuning each note to match its perfect mathematical ratio. Each note needed to be slightly out of tune with its ideal ratio, but equally so with the other notes, to be properly in tune with each other.
 - Vincenzo Galilei and his son, Galileo, studied pitch and string tension when trying to tune a lute, an ancestor of the guitar.
 - Their research led them to create the first nonlinear mathematical equation, which also allowed Vincenzo to compose music in all 24 keys, that is, in both major and minor scales for each of the 12 notes in the chromatic scale.
 - Johann Sebastian Bach proved the full possibilities of this tuning with *The Well-Tempered Clavier*, two volumes of 24 preludes and fugues in every major and minor key.
- Music then emerged as an art equal in greatness to any other after the Renaissance.
- Composers began adding instructions to musicians to help them know how to perform a piece:
 - *adagio*—at ease
 - *andante*—walking
 - *allegro*—happy
 - *presto*—quick
 - *crescendo*—louder
 - *diminuendo*—softer
- With these new developments, the first truly great music was possible, as demonstrated by the first Baroque operas, such as Claudio Monteverdi's *L'Orfeo*.

Performance Excerpts

00:09 – Ludwig van Beethoven, Piano Sonata No. 8 in C Minor, Op. 13, *Pathétique*: II. Adagio cantabile.

1:25 – Claude Debussy, *Suite bergamasque*, L. 75: "Clair de lune." Andante très expressif.

2:53 – Johann Sebastian Bach, *The Goldberg Variations*, BWV 988: Aria.

4:51 – English Folk Song, "Greensleeves."

8:13 – Harold Arlen, *The Wizard of Oz*: "Over the Rainbow."

8:35 – Lennon-McCartney, "Blackbird."

8:55 – Richard Wagner, *Lohengrin*: "Bridal Chorus."

10:41 – Hoagy Carmichael, "Heart and Soul."

15:11 – Franz Liszt, *Csárdás macabre*, S. 224.

16:05 – Frédéric Chopin, Waltz in D-Flat Major, Op. 64, No. 1, “Minute Waltz.”
22:05 – Johann Sebastian Bach, *The Well-Tempered Clavier*, Book I: Prelude No. 1 in C Major, BWV 846.
22:22 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Fugue No. 1 in C Major, BWV 846.
22:33 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Prelude No. 2 in C Minor, BWV 847.
22:44 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Fugue No. 2 in C Minor, BWV 847.
22:55 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Prelude No. 3 in C-Sharp Major, BWV 848.
23:09 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Fugue No. 3 in C-Sharp Major, BWV 848.
23:31 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Prelude No. 4 in C-Sharp Minor, BWV 849.
23:45 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Fugue No. 4 in C-Sharp Minor, BWV 849.
24:02 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Prelude No. 6 in D Minor, BWV 851.
25:15 – J.S. Bach, *The Well-Tempered Clavier*, Book I: Fugue No. 3 in C-Sharp Major, BWV 848.
29:29 – J.S. Bach, Harpsichord Concerto No. 1 in D Minor, BWV 1052: I. Allegro.

Discussion Questions

Is music a science or an art?

Why did it take more than two thousand years for music to reach its classical era?

What was the most important factor in the development of classical music?

Notes
