

## Unit 3 Assignments

### Key Terms (consult the Glossary)

Acoustics	Kithara
Aerophone	Lyre
Aulos	Membranophone
Chordophone	Musica humana
Hellenistic	Musica instrumentalis
Homophonic	Musica mundane
Idiophone	Rhetoric

### Music of the Spheres

1. “Music of the Spheres” is a term that has continued to appeal across the centuries. As one example, a musical organization in New York that has adopted the name produces concerts and lectures that “illuminate music’s historical, philosophical and scientific foundations.”

#### QUESTIONS

- a. What do you think a common response among your friends might be to the phrase “Music of the Spheres”?
- b. What other uses in popular culture does “Music of the Spheres” have today?

Consider Boethius’s three-fold division of music. *See Text p. 40.* Think of some modern-day examples that would fit into these categories:

- Musica mundana (or Music of the Spheres)
- Musica humana
- Musica instrumentalis

### 2. Pythagoras and Music Theory

Look up the difference between Pythagorean tuning and the equal-temperament tuning system used today for fixed pitch instruments.

Fixed pitch instruments are those that do not allow the instrumentalist to make fine adjustments to the frequency of the pitch. The piano is an excellent example. A pianist can control many aspects of the sound: articulation, volume, some

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aspects of timbre. But not the pitch frequency. In contrast, players of wind instruments can make fine adjustments in the tuning of each note as they play, and players of string instruments with unfretted fingerboards (like the violin) have the full continuum of frequencies available to them. The same is true for singers.

What difference does this make? We answer that question by noting that all music is based on mathematical relationships. The tonal system that we use in the West has a foundation in mathematical and physical properties. But our tonal system also comes into conflict with aspects of physics.

### 3. Tuning Systems

Looking at math and acoustics in detail may leave you utterly fascinated or completely bored, but John Crooks presents it in a way that is likely to be accessible to many in his video series “Introduction to Pitch Systems in Tonal Music.” You can watch the full series of videos at this link.

<http://bit.ly/21K3wxx>

You can also access the series at <http://ocw.uci.edu/lectures> (select the category “art”).

You can watch the whole series or focus in on video 5 and video 6 that deal more specifically with Pythagorean tuning.

Does seeing the frequencies and waveforms on an oscilloscope help you hear the fine distinctions in tuning?

## Music and Morality

3. “Music is a moral law. It gives soul to the universe, wings to the mind, flight to the imagination, and charm and gaiety to life and to everything.” – Plato

Plato wrote about music in this passage from the *The Republic*:

We said we did not require dirges and lamentations in words.

We do not.

What, then, are the dirge-like modes of music? Tell me, for you are a musician.

The mixed Lydian, he said, and the tense or higher Lydian, and similar modes.

These, then, said I, we must do away with. But again, drunkenness is a thing most unbefitting guardians, and so is softness and sloth.

Yes.

What, then, are the soft and convivial modes?

There are certain Ionian and also Lydian modes that are called lax. Will you make any use of them for warriors?

None at all, he said, but it would seem that you have left the Dorian and the Phrygian.

I don't know the musical modes, I said, but leave us the mode that would fittingly imitate the utterances and the accents of a brave man who is engaged in warfare or in any enforced business, and who, when he has failed, either meeting wounds or death or having fallen into some other mishap, in all these conditions confronts fortune with steadfast endurance and repels her strokes. And another for such a man engaged in works of peace, not enforced but voluntary, either trying to persuade somebody of something and imploring him - whether it be a god, through prayer, or a man, by teaching and admonition - or contrariwise yielding himself to another who is petitioning him or teaching him or trying to change his opinions, and in consequence faring according to his wish, and not bearing himself arrogantly, but in all this acting modestly and moderately and acquiescing in the outcome. Leave us these two modes - the enforced and the voluntary - that will best imitate the utterances of men failing or succeeding, the temperate, the brave - leave us these.

Well, said he, you are asking me to leave none other than those I just spoke of.

*The Republic* 398d-399c.

## QUESTIONS

- a. Do Plato's opinions surprise you? Are there points on which you strongly agree or disagree?
- b. Can you imagine having a similar serious conversation with someone today about aspects of music? If so, what issues might it address?

Read this article, "Music and Morality," by contemporary philosopher Roger Scruton. Again, you may find points on which you strongly agree or disagree.

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<http://spectator.org/articles/40193/music-and-morality>

### QUESTIONS

- a. Does Scruton strike you as just an old guy who doesn't understand the music of contemporary youth culture? If not, how would you describe his standpoint?
- b. Do you understand his distinction between (a) rhythm that organizes sound into movement and (b) computer-generated rhythm that simply slices time into repeatable units? What element is missing from the latter? Can you hear the difference?
- c. Does he persuade you that Plato was asking very similar questions and that the issues today are very similar to the issues in ancient times?
- d. Do you believe that there is a moral quality in music entirely separate from any text that may be associated with it? Does your answer to this question affect your view of what music is appropriate for sacred worship?