

Sample Syllabus for 15-week course

This syllabus is designed for advanced undergraduates and graduate students. For doctoral students, you could add student-selected readings and have students do more article presentations in class.

I supplement class lecture with internet videos. There are many videos, short and long, which present information about how the brain works. Always watch the video before you use it in class, as some go into more detail than is needed for an introductory course like this.

I also do some article “replications”. We do versions of a study that students read about. Refer to the online video resource [Pitch Hierarchy study replication from Krumhansl and Shepard 1979](#) for an example of this activity.

Two weeks before the semester starts, I send out a short survey to find out what topics the class is interested in. I use an online service like Survey Monkey or Qualtrics and ask them to rate topics from low to high interest, such as conducting, vocal development, culture, performance anxiety, etc. I also leave an open response for topics not on my list. I use their responses to guide some of the articles I select for class readings. The articles listed below are merely starting suggestions. Once students have read a few articles that you selected, they will be ready to start selecting their own articles for class and the final paper.

Course Objectives

This course investigates aspects of music performance, perception, understanding, and skill development through a cognitive lens. Readings will be drawn from recent neurological and behavioral research. Class activities will include experimental simulations, lecture, discussion, assessment, and activities to support your learning.

At the successful completion of this course, you will

1. Be familiar with anatomy and physiological processes related to music perception, cognition, learning, and performing.
2. Improve your own performance and/or teaching skills through application of course material.
3. Develop an area of expertise in the domain of music cognition.
4. Develop critical thinking and reading skills in response to research and related readings.
5. Demonstrate understanding of current thinking in topics including music memory, performance anxiety, perception, performance, and learning.

Reading Summaries

Summarize the assigned article or chapter.

- Start with the article citation in APA format at the top of the paper.
- 1-2 pages in length, addressing the main points of the chapter. Include enough detail that I know you read it.

Reading Outlines

See the Outline Template (posted on the Resources website). You will need to tell students whether to use the quantitative (most likely) or qualitative outline template.

Style Guide

This course uses American Psychological Association (APA) 7th edition. A good resource for rules and examples on APA style is the Purdue University OWL website. The full text of the APA 7th edition Manual is available by asking at the Reference Desk at the library.

Assignments

- Weekly Reading Summary or Article Outline
- Two quizzes on anatomy, research tools, key ideas from the chapter, main findings from articles
- Peer teaching/presentation of an article they choose
- (sometimes- MidTerm)
- Final Paper due in stages: general topic, paper proposal, meeting with me, submit final paper
- Final Presentation on their Paper
- Final Exam

Course Schedule

Chapter = Music and the Brain for Musicians

Week 1: Hearing, Auditory Scene Analysis, Introduction to Neuroscience

- Chapter 1
- Chapter 13: Central Nervous System, Peripheral Nervous System

Week 2: Evolutionary Perspectives, Brain Structure & Function *Summary - Parncutt*

- Parncutt (2018). Mother-infant attachment, musical idol worship, and the origins of human behavior. *Musicae Scientiae*, 22(4), 474-493.
- Chapter 2
- Chapter 13: Spine, Small Bits
- Chapter 14: Getting Oriented

Week 3: Pitch Perception, Brain Function *Summary - Chapter 3*

- Chapter 3
- Chapter 13: Brain Function, Coda, Reflection
- Geringer et al. (2015). In tune or out of tune: Are different instruments and voice heard differently? *Journal of Research in Music Education*, 63(1), 89-101.

Week 4: Pitch Production, Intonation, Measuring the Brain *Article Outline- Geringer*

- Chapter 4
- Choose an article about pitch from PsycInfo database. Read it. Share summary with class.
- Chapter 14: Structural Tools

Week 5: Measuring the Brain, Neuroscience of Pitch *Article Outline - Arndt*

- Chapter 14: rest of chapter
- Chapter 15: beginning, Pitch and Melody, Tonality
- Arndt et al. (2020). Same or difference? Effects of musical expertise, pitch difference, and auditory task... *Experimental Brain Research*, 238, 247-258.

Week 6: Rhythm & Timing Perception *Summary – Chapter 5 stop at Production*

- **Quiz 1**
- Chapter 5, stop at Production
- Nave-Blodgett et al., (2020). Hierarchical beat perception develops throughout childhood and adolescence and is enhanced in those with musical training. Journal of Experimental Psychology: General, 150(2), 314-339.

Week 7: Rhythm and Timing Production

- Chapter 5, Production
- Chapter 15: Beat, Rhythm, Meter
- Hammerschmidt & Wöllner (2022). Spontaneous motor tempo over the course of a week: The role of the time of the day, chronotype, and arousal. Psychological Research, Advance online publication.

Week 8: Emotion/Expression *Article Outline- Kawakami, et al.*

- Chapter 6
- Chapter 15: Emotion
- Kawakami, et al. (2013). Sad music induces pleasant emotion, Frontiers in Psychology, 4, 311.
- Hailstone, et al. (2013). It's not what you play, it's how you play it: Timbre affects perception of emotion in music. The Quarterly Journal of Experimental Psychology, 62, 2141-2155.

Week 9: Performance *Choose Reading Summary on Chapter 9 or Article Outline on choice article*

- **Quiz 2**
- Chapter 9
- Ginatempo et al (2021). *Physiological differences in hand and face areas of the primary motor cortex in skilled wind and string musicians. Neuroscience*, 455, 141-150.
- Choose an article from Chapter 9 Reference List

Week 10: Social Psychology of Music *Article Outline - Urbaniak*

- General paper topic due
- Chapter 10
- Urbaniak & Mitchell (2022). How to dress to impress: The effect of concert dress type on perceptions of female classical pianists. Psychology of Music, 50(2), 422-438.
- Chapter 15: Timbre, Familiar, Improvising, Composing and Conducting

Week 11: Language and Memory *Summary – Chapter 7 or 8*

- Chapter 7
- Chapter 8
- Demorest, et al (2010). An fMRI investigation of the cultural specificity of music memory. Social, Cognitive, and Affective Neuroscience, 5, 282-291.

Week 12: Health & Performance Anxiety *Choose **one** article to read and do an Outline on it.*

- Paper proposal due
- Chapter 12
- Wiedemann, A., Vogel, D., Voss, C., & Hoyer, J. (2021). How does music performance anxiety relate to other anxiety disorders? Psychology of Music, online preprint.
- Hoffman & Hanrahan (2011). Mental skills for musicians: Managing music performance anxiety and enhancing performance. Sport, Exercise, and Performance Psychology, 1, 17-28. DOI: 10.1037/a0025409

Week 13: Extra-Musical Benefits

- Chapter 11
- Chapter 15, rest of chapter
- Hennessy et al. (2019). Effects of music training on inhibitory control and associated neural networks in school-aged children: A longitudinal study. Frontiers in Neuroscience, 13:1080.

Week 14: How to Collaborate in Research

- Chapter 16
- Find a prospective collaborator for your paper topic and write an email to that person (don't send it. Bring it to class.)

Week 15: Final Presentations

- Exam review, Course evaluations
- Final paper due

Final Exam