Course Outline Winter 2020  
PSYCH/MUSICCOG 4PM3  
Neuroscience of Music Cognition

Instructor: Dr. Laurel Trainor  Psychology Building 305  
LJT@mcmaster.ca  x23007

Course TAs:  
Lucas Klein  kleinl1@mcmaster.ca  
Jesse Pazdera  pazderaj@mcmaster.ca

Location:  
BSB/238A

Time:  
Tuesday 11:30–1:20; Friday 11:30-12:20pm

Office hours:  
By appointment

Course Objectives. In this course we will examine perceptual, cognitive, and socioemotional aspects of music from a neuroscientific point of view. The roles of evolution, biology, innate factors, and experience in human musical activity and ability will be considered. The class will be run as a part lecture and part seminar, and students are expected to read the assigned papers before class and to participate in class discussions. Students will work in groups, do presentations in class, read primary source materials, and learn to think critically.

COURSE SCHEDULE (subject to revision)

Readings are available for download from the Avenue Course page for 4MP3.

* Student-led class discussions

**Introduction and cultural and evolutionary theories of music**

T Jan 7  
1.  Huron, 2001a (evolutionary theories of music)

F Jan 10  
2.  Trainor, 2015 (auditory scene analysis & evolution of music)

**Pitch and tonality**

T Jan 14  
Lecture: Models of tonal pitch structure & EEG primer  
3.  Trainor et al., 2002 (neural encoding of relative pitch)  
4.  Huron, 2001b (auditory scene analysis & rules of composition)

F Jan 17  
Lecture: Theories of consonance and dissonance (including McDermott et al., 2010)

T Jan 21  
5.  McDermott et al., 2016* (is preference for consonance universal?)

**Rhythm and movement**

6.  Grahn & Brett, 2007* (rhythm encoding in the brain)
F Jan 24 7. Schacter et al., 2009* (rhythm and movement across species)

9. Honing et al., 2018* (rhythm and beat in rhesus monkeys)

F Jan 31 10. Jacoby et al., 2017* (finding cross-cultural rhythmic priors)

Entrainment, Parkinson’s disease and social interaction
T Feb 4 11. Fujioka et al., 2012* (neural oscillations and entrainment)
12. McIntosh et al., 1997* (auditory rhythmic facilitation in Parkinson’s)

F Feb 7 13. Cirelli et al., 2014* (interpersonal synchrony & social behavior in infants)

Amusia, musical interventions, and effects of musical experience
15. Philips-Silver et al., 2011* (beat deafness)

F Feb 14 16. Wan et al., 2014* (melodic intonation therapy in Broca’s aphasia)

Mid-term Recess

T Feb 25 17. Trainor et al., 2012* (effect of musical experience)
Presentation group meetings with Prof

F Feb 28 Presentation group meetings with Prof

Expectation, meaning and emotion
T Mar 3 18. Huron, Chapter 1, 2006
Progress report on grant proposal due

F Mar 6 20. Salimpoor et al., 2011* (musical emotion and the reward system)

T Mar 10 21. Chang et al., 2017* (non-verbal communication between performers)
22. Limb & Braun, 2008* (improvisation)

F Mar 13 Presentation group meetings with Prof

T Mar 17 23. Wilkins et al., 2014* (musical preferences)

F Mar 20 Presentation group meetings with Prof
T Mar 24  Presentations
F Mar 27  Presentations
T Mar 31  Presentations
F April 3  Presentations
T April 7  Final discussion and take-home exam
Academic Dishonesty Policy Reminder

Academic dishonesty consists of misrepresentation by deception or by other fraudulent means and can result in serious consequences, e.g., the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, specifically Appendix 3, located at http://www.mcmaster.ca/academicintegrity.

Evaluation
Late assignments will not be accepted unless prior arrangements have been made with the instructor.

14% Attendance, participation, leading class discussion of 2 papers. Note that for high marks, comments and questions must make an intellectual contribution.

24% Critiques. Due dates depend on which ones you are assigned.

2% Progress Report on Grant Proposal. Due March 8th

15% Written Grant Proposal. Due the class before your oral presentation.

15% Oral Presentation of Grant Proposal.

10% Peer Evaluation of Grant Proposal. Due one week after the presentation you are evaluating.

20% Final Take Home Exam

McMaster's Grading Scale

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<th>Grade</th>
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<td>A+</td>
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The instructor reserves the right to adjust the final marks up or down, on an individual basis, in the light of special circumstances.

A note on dates and deadlines: The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with an explanation and the opportunity to comment on changes. It is the responsibility of the student to check Avenue and their McMaster email regularly during the term and to note any changes.

A note on class attendance: Because much of this class is based on discussion and presentations, is very hard to do well unless you attend all classes.