

# Music Cognition

PSYCH 2MA3 / MUSICCOG 2A03

Term 1, 2009

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**Meeting Time/Place:** Tuesday 2:30-4:20 pm, Wednesday 2:30-3:20 in BSB 108

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## Course Description

*Music Cognition* presents an overview of the physical basis and cognitive processing of music. The course begins with a description of the fundamental acoustic features of musical sound, and then moves onto higher-level topics related to the cognitive processing of melody, rhythm, texture, and form in music. The course also discusses music's important relationships with dance and language.

A second component of the course is a "Mini-Course in World Musics" – taking place during the Wednesday sessions – that presents a cross-cultural analysis of the major musical styles of the world. The goal of these sessions is not only to familiarize students with the principal music families of the world but to teach them how to think about music using a comparative approach.

## Course Objectives

By the end of the semester, you should (a) understand the nature of sound waves, their propagation and their interactions during the generation of music; (b) have a general understanding of how to read waveforms, spectra, and spectrograms; (c) be familiar with the basic components of melodic and rhythmic systems; (d) understand music's relationships with dance and language; and (e) be familiar with the stylistic features of the world's major musical styles.

NOTE: While an ability to read music is not a requirement for the course, students enrolling in the course are strongly encouraged to have a basic competency in music. A good model for this is Level 2 Rudiments of the Royal Conservatory of Music.

## **Readings**

### **TEXTBOOK:**

Howard and Angus's *Psychoacoustics and Acoustics*, 3<sup>rd</sup> Edition (2006). Focal Press.

### **ARTICLES:**

See the last page of this syllabus for the assigned articles.

## **ELM**

This course uses ELM to post the course outline, lecture slideshows, and other materials. Please go to [elm.mcmaster.ca/webapps/portal/frameset.jsp](http://elm.mcmaster.ca/webapps/portal/frameset.jsp) in order to find out how to log onto the course's home page.

## **Course Evaluation**

### ***Exams***

There will be two **exams**. *Exam 2 will constitute one part of the final exam*. In addition, there will be a separate **comprehensive final** that will constitute the second part of the final exam and that will cover material from the entire course. The exams will consist of true-false questions, fill-in questions, and short-answer questions. The comprehensive final will consist of fill-in questions only.

Exams will cover the textbook, readings, and articles. Lecture material that does not pertain to these three sources will not be tested. In addition to concepts, you will be tested on *graphical* material, such as spectra, waveforms, etc.

NOTE: The world-music part of the course will be tested on these exams. However, you will not be given sound examples on the exams. Only information from lecture notes will be tested.

### ***Term Paper***

You will be asked to write a 4-5-page (double-spaced) term paper on a topic of your choice in music psychology. The paper will count for 15% of the final grade, and must be turned in no later than **Tuesday, December 1** at the beginning of class. The report should be typed double-spaced. Don't forget to put your name and student ID on any material submitted for course credit.

The paper should be based on at least 3 *primary* research articles (i.e., not review articles, book chapters, magazine articles, etc.) dealing with some aspect of course. The topic and a list of 3 references should be presented to the TA by week 9 (**November 10** is the final date). Your paper should discuss the experimental design, results, and interpretation of the studies. The research articles that are chosen should be related enough to one another that a *comparison* of their findings can be discussed.

NOTE: Citations and references should be written according to American Psychological Association (APA) style. Be meticulous when creating your reference list. If you are not familiar with how to create citations or references, please consult your TA.

### ***Problem Set***

A problem set containing questions about acoustics and psychoacoustics will be posted during week 2 and will be due no later than **Tuesday, October 27** at the beginning of class. It will count for 10% of the semester grade. Don't forget to put your name and student ID on any material submitted for course credit.

### **Contribution of the Assessments to the Final Grade**

2 exams (each one 25% of the grade)	50% of the grade
Comprehensive final	25% of the grade
Term paper	15% of the grade
Problem set	10% of the grade

### **An Important Note about Missing the Midterm (Exam 1)**

If you are too sick to write the midterm, you are required to inform me of this by email or phone, preferably *before* the midterm but no more than 48 hours after the midterm. In addition, you must schedule a time with the TA to take a make-up midterm no more than one week after the midterm date. **Please understand that presenting a doctor's note to the Dean's office does NOT exempt you from writing the midterm.** Failure to take the midterm by one week after the midterm date will result in a **total loss of credit for the exam**, unless you have certification from a doctor that you have a chronic condition and are unable to write the exam at that time.

### **McMaster University Grading Scale**

A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	0-49

### **Academic Integrity**

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. The academic credentials you earn are rooted in principles of honesty and academic integrity. Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour 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 types of academic dishonesty please refer to the Academic Integrity Policy, located at <http://www.mcmaster.ca/academicintegrity>

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations.

### **A Note from the University**

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 explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

### **A Summary of Important Dates (all of them are Tuesdays at 2:30 pm, except the final exam)**

October 27	Problem Set is due
November 3	Exam 1
November 10	Term Paper topic (+ 3 references) is due
December 1	Term Paper is due
December ??	Exam 2 + Comprehensive Final (date, time and location TBA)

## Weekly Lecture and Reading Schedule

Week	Tuesday Lecture Topic	Howard & Angus	Articles	Wednesday "World Music" Session
1 9/15-16	(a) the "standard" model of music (b) Is music an art or a science? (c) music evolution			Classification of musics and instruments
2 9/22-23	(a) sound waves  (b) waveforms and spectra	Ch. 1		Africa (sub-Saharan)
3 9/29-30	(a) standing waves  (b) hearing	Ch. 1  Ch. 2		Aboriginal Australia and Melanesia
4 10/6-7	(a) pitch perception  (b) intervals and tuning systems	Ch. 3  Ch. 3		Middle East (Arabic, Turkish, and Persian styles)
5 10/13-14	(a) instruments I: stringed instruments  (b) instruments II: woodwinds and brass	Ch. 4  Ch. 4		Old Europe
6 10/20-21	(a) instruments III: the voice; instrumental timbre  (b) melody and harmony	Ch. 4; Ch. 5	Krumhansl (1982)	South Asia (India, Pakistan)
7 10/27-28	(a) form (b) texture			East Asia (China, Japan, Korea, Tibet)
8 11/3-4	<b>Exam 1 (November 3), covering lectures 1a-6a, and Africa → South Asia in the World Music series</b>			<b>No class (November 4)</b>
9 11/10-11	(ab) rhythm in music and dance		Drake (1993); Schachner (2009)	Southeast Asia (Indonesia, Thailand, Cambodia)
10 11/17-18	(ab) music and language		Ross (2007)	North America and the Circumpolar Region
11 11/24-25	(ab) emotion and meaning in music		Konecni (2008)	South and Central America
12 12/1-2	(ab) performance and composition		Friberg (2006)	Polynesia and Micronesia
Final 12/?	<b>Exam 2 (covering lectures 6b-12ab) + Comprehensive Final</b>			

## **References for Articles**

### Week 6

Krumhansl, C., & Kessler, E. J. (1982). Tracing the dynamic changes in perceived tonal organization in a spatial representation of musical keys. *Psychological Review*, 89, 334-368. ASSIGNED: pp. 340-344.

### Week 9

Drake, C. (1993). Reproduction of musical rhythms by children, adult musicians, and adult nonmusicians. *Perception & Psychophysics*, 53, 25-33.

Schachner, A., Brady, T. F., Pepperberg, I. M., & Hauser, M. D. (2009). Spontaneous motor entrainment to music in multiple vocal mimicking species. *Current Biology*, 19, 831-836.

### Week 10

Ross, D., Choi, J., & Purves, D. (2007). Musical intervals in speech. *Proceedings of the National Academy of Sciences*, 104, 9852-9857.

### Week 11

Konecni, V. J. (2008). Does music induce emotion? A theoretical and methodological analysis. *Psychology of Aesthetics, Creativity, and the Arts*, 2, 115-129.

### Week 12

Friberg, A., Bresin, R., & Sundberg, J. (2006). Overview of the KTH rule system for musical performance. *Advances in Cognitive Psychology*, 2-3, 145-161. ASSIGNED: pp. 147-154.