

# CGSC 267: Music Cognition

Evan D. Bradley, Instructor

Winter Session 2010, University of Delaware



## Basics

### Class

**day** MTWRF

**time** 11:30am–1:00pm

**place** Willard Hall #135, & excursions TBA

**www** <http://udel.edu/~yevb/muscog.htm>

### Instructor

**email** [yevb @ udel . edu](mailto:yevb@udel.edu)

**office** 46 E. Delaware Ave, #102 (Dept. of Linguistics & Cognitive Science)

**hours** TR 1:30–2:30 in person, W 3–4 online, and by appointment

## Course

### Overview

This course will explore music as a human cognitive domain, and its relation to other areas of cognition, surveying a number of areas. The format will be highly interactive, with minimal lecture and maximal discussion. Materials used will range from basic reference texts on music, psychology, and cognitive science to primary research articles (both classic and cutting-edge) to films and recordings. Your work in the course will include short writings on a variety of topics, and culminate in a research project tailored to your interests.

### Philosophy

The field of music cognition is highly interdisciplinary, and the material we will cover draws from fields as diverse as music theory, psychology, biology, anthropology, and mathematics. None of us (including me) is an expert in all of these; therefore, I will not assume any specific background knowledge on your part, music-theoretic or otherwise. The background knowledge that you do have (and I know you must have some) is essential to the success of this course. None of us knows everything there is to know about music, but each of us has something to contribute, so I am counting on each of you to share this knowledge when the opportunity presents itself. More so than teaching you a few facts, my goal for the course is to create an environment where we work together as a team to discover something new about music, and for each student to gain some new insight into this uniquely human phenomenon.

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## Objectives

**Learning Goals** This course surveys a wide variety of topics, but will be guided by a core set of learning goals. At the conclusion of the course, my aim is for you to be able to:

1. recognize elements of music structure important for understanding its processing;
2. explain cognitive and biological mechanisms involved in musical behaviors, and interpret the results of experiments demonstrating these mechanisms;
3. describe the relation between music and other cognitive domains;
4. analyze theories of music's origin and function;
5. describe universal elements of music.

**Academic Goals** Secondary to the domain-specific goals enumerated above, I hope to use music as an example to illustrate how research is conducted in cognitive science, and to improve your academic skills in a number of areas which I believe will benefit you in any subject, whether you are a freshman just entering college, or a senior preparing for a career or graduate school. After taking this course, I hope that you will improve your ability to:

1. read primary research literature and interpret the results of experiments;
2. critically evaluate folk beliefs by drawing on theoretical knowledge and experimental evidence;
3. synthesize multiple sources of information into a coherent view of a topic;
4. communicate scientific information to others effectively using a variety of media.

## Topics

We will survey a broad range of topics during this winter session in order to give you a wide view of what music cognition is all about, the diverse subjects it studies, and the methods it uses. I have attempted to keep the schedule flexible, so please feel free to suggest topics you are interested in, or let me know if you'd like to explore a topic more deeply. Some of the topics on the agenda are:

**structure** What makes a sound musical? We'll study the basic elements of music (rhythm, pitch, melody, harmony), how they are organized, and how they vary or are universal in world musical systems.

**perception** How are the basic elements of music processed by the mind? We'll explore how our minds create musical meaning from sound, and correlate formal elements of music with psychological phenomena.

**physiology** Have you ever been moved to tears, or gotten goosebumps from a piece of music? We'll discuss how music is processed in the brain and interacts with our emotions, physical senses, and health.

**skill & performance** What is the difference between listening to music and producing it? We'll investigate how performers and ensembles develop the skill to produce music, and evaluate the effect of music and music education on development and other cognitive areas.

**origins & functions** Why is there music? We'll consider the evolutionary origin of music, and how it is intertwined with another uniquely human cognitive domain: language. We'll also discuss the individual and social functions of music.

## Materials

There is no textbook for this seminar. Readings will come from a variety of sources, and will be available for download from the course website, or will be otherwise provided to you. In addition, we will use a variety of multimedia sources, and whenever possible I will make these available or point you toward where you might acquire them yourself. Below, please find a partial list of references (at the conclusion of the course, I will post an updated reference list with any materials added during the course of the session).

**Supplemental Reading** Some readings will be ‘optional’ in the sense that they will be provided to ensure that everyone has the necessary background knowledge to understand and discuss the main readings, or to go beyond what will be discussed in class for those who are interested; I leave their necessity to your judgment, but please consult me if you are unsure.

## Assignments

As this is a seminar course, your assignments will consist primarily of short, reflective writings, rather than quizzes and tests. I’m interested in assessments which let me know what you’ve gotten out of the discussion, and which will contribute to further class discussion. Although this is not an online course, I will ask you to submit many assignments online and to check the website daily for updates and additional resources for assignments. Below is an overview of the types of assignments you will complete; specific instructions for each assignment will be provided as they are assigned.

### Homework

To help you prepare for and reflect on class discussions, I’ll ask you to complete several types of homework assignments, including reading questions and reaction papers.

**Reading Questions** The core of the course will be discussion; as such, it is imperative that you have a thorough understanding of the materials under discussion. The readings we will be discussing in this course may be complex, and include unfamiliar topics and methods. In order to help you focus your efforts, I will provide pre-reading questions as homework for many readings. The purpose of these questions is twofold: first, by having these questions in mind *before* you read, you will be able to focus on those aspects of the reading most important for our purposes; second, they will help you reflect on the reading, and provide a starting point for class discussion. I will also ask you to generate your own questions after reading, either to stimulate discussion, or request clarification on something you’re unsure about.

**Reaction Papers** At the conclusion of major units of discussion, you will write short papers in which you’ll integrate and extend ideas discussed in class, and provide your own perspective.

**Other Homework** Other homework assignments may include listening assignments or experiments, collecting or brainstorming examples for class discussion, or other assignments at my discretion.

### Classwork

I recognize that in a course which meets daily, excessive homework can be a drain on your time and energy. With that in mind, I will attempt to assign a moderate amount of homework, balanced with in-class assignments, which make up a substantial portion of your grade.

**Discussions** The core of this course consists of discussion; therefore, each student is expected to be prepared for and actively contribute to the discussion. Do not be afraid to ask questions, no matter how silly you think they may be! You will get the most out of this course by asking questions when you do not understand something, and by sharing your own knowledge or insight when you have something to add.

**Leading Discussions** I will periodically assign students to take responsibility for leading class discussions of readings or portions of readings. This is where you have the chance to use your background knowledge or expertise to help the rest of the class understand a topic better. Volunteers are appreciated; if there is a topic or reading you would like to take responsibility for, please let me know.

**Listening** Most likely, you’re taking this course because you have a strong interest in music — and we (the class) want to know what that is. Each student will have the opportunity to present the class with their favorite music, and to explain why it is important to them. My hope is that this activity will be both fun and informative, and encourage you to introspect about your own musical experiences and link them to topics discussed in the course.

**Other Classwork** These may be individual reading or writing assignments, small group exercises, lab demonstrations, or other activities.

## Research Project

The culmination of your work in the course will be a library research project on a topic of your choosing. Because we will be covering so many topics as a class, the depth to which we can explore each of them is necessarily limited. The purpose of this project is to give you the opportunity to explore one topic in detail, and to independently apply the knowledge and skills gained during readings and class discussions.

**Proposal** In order to help you focus your work and ensure the feasibility and timely completion of your project, I will schedule a meeting with you during the first or second week to discuss your interests; then, you will compose a written proposal outlining the purpose and questions you will address along with a preliminary list of sources.

**Paper** Your research paper will consist of an annotated bibliography, collecting information from a variety of sources (primary research literature, reference material, multimedia, etc.), and incorporating it into a coherent overview of your topic.

**Presentation** Each student will present their project to the class during the final week, and receive feedback from the instructor and their peers.

## Policies

### Grades

**Assignment Weighting** Each assignment carries a different weight in determining your overall grade.

| category         |     | assignment           |     |
|------------------|-----|----------------------|-----|
| homework         | 35% | reading questions    | 10% |
|                  |     | reaction papers      | 10% |
|                  |     | other homework       | 5%  |
| classwork        | 35% | discussion           | 10% |
|                  |     | discussion leading   | 10% |
|                  |     | in-class assignments | 10% |
|                  |     | listening            | 5%  |
| research project | 30% | proposal             | 5%  |
|                  |     | presentation         | 10% |
|                  |     | paper                | 15% |

**Grading Scheme** Your grade for the course will be determined based on a hybrid norm- and criterion-referenced grading scheme. *Criterion* refers to the fact that should you achieve a certain score, you will earn a corresponding grade (see the table below). *Norm* refers to the fact that I take the class distribution of scores into account when assigning grades.

| score $\geq$ | grade $\geq$ |
|--------------|--------------|
| 93%          | A            |
| 90%          | –            |
| 87%          | +            |
| 83%          | B            |
| 80%          | –            |
| 77%          | +            |
| 73%          | C            |
| 70%          | –            |
| 67%          | +            |
| 63%          | D            |
| 60%          | –            |

This is not grading ‘on a curve’ *per se*, in that it is possible for everyone in the class to get an A, or for everyone to get a C; this simply means that I may adjust the cutoffs for each letter grade at my discretion, depending on the overall distribution of scores. I will only adjust these cutoffs downward—that is, you are guaranteed to receive a grade at least as high as that listed in the table corresponding to your score, but you may receive a higher grade. I also take individual improvement over the course of the semester into account. Cutoff and improvement adjustments are not subject to appeal.

**Grade Appeals** I am human, and I do make mistakes when grading assignments. If you feel I've made a mistake, or been unfair in grading your work, or if you'd just like further explanation so that you can improve your work, please speak to me. At my discretion, I may give you the opportunity to revise an assignment that you feel you could improve.

**Missed/Late Work** In a month-long course, it is very easy to fall behind quickly. I have done my best to design the course to be flexible and manageable, so please let me know early on if you are having trouble with any particular assignment, or the workload in general. You must complete all assigned work in a timely fashion; assignments incomplete at the conclusion of the term will receive a zero; students who do not complete major assignments (*e.g.*, the research project) may receive an incomplete grade (at the instructor's discretion) until their work is complete.

## Attendance

In a discussion-oriented course such as this one, attendance is essential—many activities are simply not replicable outside of class, and during the condensed winter session the effect of missing one class is amplified. Please let me know ahead of time if you will be absent from class; in the case of emergencies, please contact me and your classmates as soon as possible to find out what you've missed. Makeup opportunities for in-class assignments (if possible) will be permitted for approved absences at the instructor's discretion.

**Influenza warning!** please do not attend class if you feel sick. The University has advised all instructors that:

in compliance with Centers for Disease Control (CDC) recommendations, students with flu-like illness should *not* attend class or come to campus. They should remain home, if possible, and not return to campus until fever-free for 24 hours without the use of fever-reducing medications. It is critical that you not interact with others to minimize spreading the flu.

Please inform me within 24 hours by e-mail if you're ill with the flu. I will get back to you promptly via e-mail to make alternative arrangements for you to continue to complete the course. In the event of a catastrophic outbreak or University-wide closure, I have backup plans for converting the course to an online format.

## Academic Integrity

Academic honesty is of the utmost importance in the academic world, and in scientific research. Cheating, plagiarism, and other forms of academic dishonesty are serious offenses, and ignorance is no excuse; therefore I urge you to become familiar with the University's Academic Integrity Policy, found at <http://www.udel.edu/studentconduct/ai.html>. We will discuss specific principles of academic writing as you begin your research projects, and I encourage you to seek my advice if you are unclear about any part of the process.

## Instructor Availability

My usual policy is to answer student emails within 24 hours; in this course, however, you are likely to see me in class within 24 hours of sending any email. Therefore, I will do my best to answer emails sent between the end of class and the close of business (usually 6pm) the same day. I will do my best to answer emails sent on the weekend within 24 hours. Of course, you can always ask me your questions during class, or schedule a time to meet in person. Please reserve phone contact for emergencies.

## Schedule

On the following page you will find the preliminary schedule for the course. It is highly subject to change, depending on progress and interest. I'll alert you to changes in plans, but please check the course website frequently for updates to topics and assignments. **bold** readings indicate questions are assigned; both those required reading with and those without questions should be completed (and questions answered) before the class for which they are assigned; *italics* indicate optional background readings that may help you understand the main readings, or readings that pursue a topic in greater depth, and which may form the basis for a project topic.

| week  | day                            | unit          | topic                                  | reading   | due               |
|-------|--------------------------------|---------------|--|---|-------------------|
| 1     | M 1/4                          | perception    | introduction                           | <i>Thompson (2009), ch.1</i>  | pre-class surveys |
|       | T 1/5                          |               | pitch                                  | Thompson (2009), ch.3<br><b>Rasch &amp; Plomp (1982)</b><br><i>Johnson (2003), ch.1-3</i> |                   |
|       | W 1/6                          |               | tonality                               | <b>Burns &amp; Ward (1982)</b><br><i>Krumhansl &amp; Toiviainen (2003)</i>                |                   |
|       | R 1/7                          |               | melody                                 | Thompson (2009), ch.5, pp.91-112<br><b>Patel (2003)</b>                                   |                   |
|       | F 1/8                          |               | <i>Evan absent</i>                     |   |                   |
| 2     | M 1/11                         |               |  | film (Mannes, 2009)   |                   |
|       | T 1/12                         |               |  | <i>guest speaker</i> , Dr. Suzanne Burton   |                   |
|       | W 1/13                         |               |  | <b>Tramo et al. (2003)</b>  | reaction paper #1 |
|       | R 1/14                         |               | harmony                                | Maess et al. (2001)<br>Patel et al. (1998)  |                   |
|       | F 1/15                         |               | rhythm                                 | Thompson (2009), ch.5, pp.112-118<br><b>Lerdahl &amp; Jackendoff (1983), ch.2</b>         |                   |
| 3     | M 1/18                         | performance   | <b>MLK holiday — no class</b>          |   | midterm feedback  |
|       | T 1/19                         |               | <i>research/lab session in library</i> |   |                   |
|       | W 1/20                         |               | development                            | Thompson (2009), ch.4<br>Trehub (2003)  | reaction paper #2 |
|       | R 1/21                         |               | skill                                  | <b>Sloboda (1994)</b><br>Ashley (2000)<br>Dunford (2000)                                  |                   |
|       | F 1/22                         |               | effects                                | <b>Schellenberg (2003)</b><br>Rauscher et al. (1993) & replies                            |                   |
| 4     | M 1/25                         | physiology    | emotion                                | Thompson (2009), ch.6<br>Fritz et al. (2009)<br><i>Sloboda (1991)</i>                     | proposals         |
|       | T 1/26                         |               | disorders                              | <b>Sacks (2008), ch.8,14</b><br>Peretz & Hyde (2003)                                      |                   |
|       | W 1/27                         | origin        | evolution                              | <b>Cross (2003)</b><br><b>Huron (2003)</b>  |                   |
|       | R 1/28                         |               | language                               | <b>Patel (2008a), ch.5</b><br><i>Lerdahl &amp; Jackendoff (1983), ch.11-12</i>            |                   |
|       | F 1/29                         |               |  | Abumrad (2006)  |                   |
| 5     | M 2/1                          | <i>flex</i>   | personality                            | Rentfrow & Gosling (2003)<br>Gerra et al. (1998)  | reaction paper #3 |
|       | T 2/2                          |               | health                                 | Kuhn (2002)<br>Khalifa et al. (2003)  |                   |
|       | W 2/3                          | presentations |  |   |                   |
|       | R 2/4                          |               |  |   |                   |
|       | F 2/5                          | <i>flex</i>   | review                                 | <i>Nature</i> essays<br><b>Hauser (2009)</b>  | final feedback    |
| S 2/6 | <b>final paper due at noon</b> |               |  |   |                   |

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