



The Evolution of Music



SCI-490, SPT: The Evolution of Music

Department of Mathematics and Science, School of Liberal Arts and Sciences

Course Description:

This short course explores the evolution of music from a biological perspective. Although we will look at forms of “music” produced by other animals, our primary focus will be on human musical forms. We will look at how music affects the human brain, consider the role that music has played in human societies, and assess various hypotheses for how our musical instincts evolved in our ancestors. We will also consider how the cultural evolution of musical forms, instruments, and players interacts with our evolved musical abilities.

Upon completion, this course is worth one (1) credit.

Meeting Time: Wednesdays, 9:30 am to 12:20 pm, Engineering 274

Instructor: Dr. Christopher Jensen
Assistant Professor, Department of Math and Science
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Phone: 718-636-3572, x3572 from the BK campus

Office Hours: Mondays 10 am to 1 pm *or by appointment*

Course Goals:

- To explore how neuroscience has begun to uncover the mechanisms that underlie the perception, processing, production, and recall of music.
- To understand how genetic and environmental factors contribute to our comprehension and appreciation of music.
- To compare the music made by other animals with the music produced by humans.
- To determine where and when in the tree of life music emerged as an important form of animal communication.
- To consider how fossil evidence can be used to determine when human musical abilities emerged.
- To assess whether music is an adaptation and suggest what functions music might serve in human populations.
- To consider contemporary musical genres in light of our understanding of human musical evolution.

Learning Objectives: Successful completion of *The Evolution of Music* will allow you to...

- Explain what we know about the processing of music in the brain, and to describe the experiments and observations which have built this knowledge.
- Compare the relative roles of genetics and environment in shaping our perception of music, and assess how and when genetics and environment interact.
- Describe the kinds of music produced by different animals, and compare these forms of music with that produced by humans.
- Explain how fossil evidence shapes our understanding of how music evolved in the human species.
- Compare and contrast different evolutionary hypotheses about why music is such a prevalent and important part of human culture.
- Analyze a contemporary musical genre in light of the concepts taught in the course; present this analysis to the class.

Assessment Criteria:

Below is a summary of how you will be graded in this course. All grades will be posted on the *LMS*, so please take advantage of the fact that you can always know how you are doing in the course.

Contribution to Grade	Category	Description
15%	<i>Reading Response</i>	During each week of class that we have assigned readings, I will post a series of questions on the <i>LMS</i> . These questions will help guide your reading and get you thinking about key issues that will be discussed in class. To receive credit, you must provide answers by 5:00 pm on the day before class. Unlike other assignments, no late reading responses will be accepted.
20%	<i>Participation</i>	We'll be discussing course readings in light of our own particular concerns. I'll have questions for you; I will expect you to have questions for me. Come to class having read and thought about assigned readings, ready to actively engage in dialogue.
15%	<i>Assignments</i>	You will complete assignments during class and as homework. Some of these assignments will be done individually, others will require group cooperation. I will be grading each assignment based on its clarity of thought, level of insight, and contribution to class dialogue.
50%	<i>Final Project</i>	For your final project, you will pick a musical genre and analyze it in light of the concepts learned in the course. Specific requirements are outlined in the <i>Final Project Guidelines</i> , which will be distributed on the first day of class and will also be made available via the <i>LMS</i> .



Under no circumstances will personalized extra-credit work be provided for students who have missed classes or failed to submit work on time



Lateness and Absence:

Of Students: I expect you to arrive to class on time. Lateness and absence can adversely affect your participation and assignments grades.

Of Assignments: Late assignments will be penalized by 10% per day. Reading responses cannot be submitted for credit after the stated deadline.

Excuses: There are very few legitimate reasons to miss all or part of a class session or for submitting assignments after the stated deadlines. In order for an absence or lateness to be excused, you must provide formal documentation stating which classes/deadlines were affected and explaining the reason behind the absence; all documentation will be subject to strict verification. Valid excuses include family emergencies and chronic personal health issues. The following reasons do not excuse lateness or absence: routine (i.e. non-chronic) illness, oversleeping, excessive work load in other classes, inability to use the *Learning Management System*, or "forgetting".

Learning Management System (LMS):

During the course of the semester, we will make extensive use of Pratt's *Learning Management System (LMS)*. I recommend that you use the *Firefox* browser to access the *LMS* via this page: <http://lms.pratt.edu/> (I discourage you from using the *my.pratt.edu* entrance point, as it is not always working). Use your ONEKEY username and password to log in. I expect you to check the *LMS* several times a week for announcements, reading assignments, and updates to your class grade (note that you can also set the *LMS* to send you email messages every time our class page is updated). I will be using the *LMS* to send email announcements throughout the semester, so please make sure that you check the email address listed under your *LMS* profile regularly. "I forgot to check my Pratt email" is a valiant but invalid excuse.

I try to make the assignments, announcements, and other documents I post on the *LMS* as universally-readable as possible. The only proprietary program you will need to have loaded onto your computer is *Acrobat Reader*, which can be downloaded here: <http://www.adobe.com/products/acrobat/readstep2.html>. I strongly recommend that you use *Acrobat Reader*, rather than another program, to read all of the PDF's provided in this class.

***Important*:** If you should have any problems with the *LMS*, immediately contact me via email or phone, or visit the **Help Desk** in the basement of the Engineering Building (they can also be contacted at x3765 or helpdesk@pratt.edu). In order for me to verify claims of *LMS* outages, I must hear from you when the *LMS* problem occurs, not hours or days later.

Reduced-Paper-Use Classroom:

Whenever possible, we will reduce the amount of paper that this course consumes. All of your out-of-class assignments, including the two-dimensional components of your two projects, must be submitted electronically via the *LMS*. Your work will be graded and returned electronically. Please do your best to reduce the amount of printing that you do for the course.

Readings:

You will be assigned a series of reading materials from popular science periodicals, books, and the scientific literature. All readings will be posted on the *LMS*, and the following resources will be on reserve in the library:

Levitin, Daniel J. (2006). *This is Your Brain on Music*. Plume. (ISBN: 978-0-452-28852-2)

Sacks, Oliver (2007). *Musicophilia: tales of music and the brain*. Vintage Books. (ISBN: 978-1-4000-3353-9)

Wallin, Nils L., Bjorn Merker, Steven Brown, editors (2000). *The Origins of Music*. MIT Press. (ISBN: 978-0-2627-3143-0)

You are encouraged to save paper by viewing PDF-based readings electronically (as opposed to printing them out).

Classroom Civility and Academic Honesty:

I expect you to maintain the civility and integrity of our course in and out of the classroom. In class, this means arriving on time, turning off cell phones and refraining from sending text messages, maintaining focus on class discussion, respecting the right of others to speak, and leaving the classroom in good condition (among other things). Out of class, this means properly citing all work that is not your own.

Any disruptive, disrespectful, or dishonest behavior will be promptly reported to the appropriate campus authority. Students must adhere to all Institute-wide policies (listed in the *Bulletin* under “Community Standards”) which include policies on attendance, academic integrity, plagiarism, computer, and network use. Please see <http://www.pratt.edu/policies> (click on *Judicial Procedures*) for policies and procedures for handling academic conduct issues.

Help with Writing:

The major project in this class will require you to produce written work. All students can benefit from feedback on their writing. I am happy to read and respond to a rough draft of the final project, provided it is emailed to me no later than 5 days before the project is due.

Pratt’s *Writing and Tutorial Center* can also help you produce the best project possible. The center is located on the 1st Floor of North Hall (it has all the great fish tanks... you can’t miss it!). Call them at (718) 636-3459 or send an email to wtc@pratt.edu to make an appointment.

Rights of Students with Disabilities:

Any student eligible for and requesting academic accommodations due to a disability is requested to provide a letter of accommodation from *Disability Services* within the first few weeks of the semester. Please contact Mai McDonald, Disability Services Coordinator, in the *Office of the Vice President for Student Affairs*, Main Building, Lower Level: 718-636-3711. See <http://www.pratt.edu/disabilityservices/> for more information.

<i>Important Dates</i>	
Event	Date
<i>Final Project assigned</i>	Week 01
<i>Final Project Proposal due</i>	Friday, April 16th @ 11:59 pm EST
<i>Final Project uploads due</i>	Friday, April 23rd @ 11:59 pm EST
<i>Final Project Summary due</i>	Friday, April 30th @ 11:59 pm EST
<i>Final Projects presented in class</i>	Wednesday, May 5th

Weekly Units:

Week	Date	Major Topic(s)	Key Questions	Readings
1	Apr. 7th	Introduction to the Science of Music	<p>How do we define music?</p> <p>How do scientists study music?</p> <p>How does our brain process music?</p> <p>What drives our appreciation of music?</p>	<p><i>Scientific American</i> "Music and the Brain"</p> <p><i>Current Biology</i> "Universal Recognition of Three Basic Emotions in Music"</p> <p><i>Nature</i> "Music, maestro, please!"</p>
2	Apr. 14th	Musical Origins	<p>What other animals make music?</p> <p>Do we share common mechanisms for producing and perceiving music with our animal relatives?</p> <p>How unique was the evolution of music in the human lineage?</p>	<p><i>Science</i> "The Music of Nature and the Nature of Music"</p> <p><i>Animal Behaviour</i> "Songs of male humpback whales, <i>Megaptera novaeangliae</i>, are involved in intersexual interactions"</p> <p><i>Scientific American</i> "Calls of the Wild"</p>
3	Apr. 21st	Fossil Evidence for Human Musical Abilities	<p>Can we use fossils to determine when human beings developed music?</p> <p>What does the fossil record tell us about the origins of human musical ability?</p>	<p><i>Nature</i> "New flutes document the earliest musical tradition in southwestern Germany"</p> <p><i>The Origins of Music</i> Chapter 14 "Fossil Evidence for the Origin of Speech Sounds"</p>
4	Apr. 28th	Understanding the Human Music Instinct	<p>Is music an adaptation?</p> <p>What function(s) does music serve?</p> <p>How can we test hypotheses about the evolution of music in the human species?</p>	<p><i>Scientific American Mind</i> "Why Music Moves Us"</p> <p><i>Nature</i> "Dance reveals symmetry especially in young men"</p> <p><i>This is Your Brain on Music</i> p. 247-267</p>
5	May 5th	Music in Modern Human Society	<p>What do modern musical genres tell us about the evolution of music?</p> <p>In what ways do "evolutionary universals" still rule our appreciation of music?</p> <p>How do new musical forms interact with our biologically evolved ability to perceive music?</p>	<p><i>Student Project Summaries</i></p>