MUSI/CGSC 358: Cognition of Musical Rhythm
Prof. Ève Poudrier, Department of Music, Yale University

Instructor

Ève Poudrier, Assistant Professor of Music Theory, Department of Music;
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Practical Information

Class times & location: T&Th 11.35-12.50, SKL 210
Office location: Department of Music, 469 College Street, Room 301
Office hours: by appointment only
Contact: (203) 432-2995; eve.poudrier@yale.edu (best way to reach me)

I check class-related emails *once a day*, usually before noon. If you have questions about homework, post your query on the course blog *well in advance of the due date*. Because the course blog (or "virtual lab") is the primary tool I will use to communicate with you and share materials, *familiarize yourself with it as soon as possible*. For first-time login, use the "Course Blog" link on the left menu of the classes*v2 course site. You may also access the platform directly at: http://musi210f14.coursepress.yale.edu/. For technical assistance, contact itg@yale.edu.

Course Policies

Music courses numbered 300 and above require the ability to read music. Additional musical experience (prior music lessons, playing an instrument, music ensemble performance, etc.) is not required, but will be helpful. This course has a Hu designation, and will satisfy the area requirement in the humanities and the arts. *Shoppers must attend each class and complete all the work assigned during shopping period.*

Nature & Purpose of Course

Where does the power of music to "move" us come from? Is "feeling the beat" a uniquely human ability? Do athletes who listen to music while training perform better? Does background music influence our shopping behavior? Why has music so often been a part of military actions? Can rhythm be used as a healing tool?

This course is situated at the interface of music psychology and music theory, and will integrate concepts and methods from both fields. At the end of the semester, you will have gained critical understanding of the issues at stake in the study of musical rhythm and acquired a set of skills that will enable you to formulate research questions, conduct a literature review, and design and conduct a behavioral experiment aimed at exploring an aspect of musical rhythm that is relevant to you. To reach this goal, we will explore music from different historical periods and styles, read landmark studies in music theory and music psychology, and dig into the many recent empirical studies that deal with rhythm production, perception, and cognition.

Can the conceptual and methodological gap between music theory and music psychology be fruitfully bridged? Theories of musical rhythm have a long history, from Aristoxenus and Plato in Greek Antiquity to Mathis Lussy and Hugo Riemann in the 19th century. These theories range from mostly pedagogical works aimed at musical practitioners of a given style to speculative theories that attempt to unveil underlying generative principles at work in the "musical mind" of composers as represented by specific pieces. In contrast, the core of empirical research dealing with rhythm has been focused on identifying "universal" laws of rhythmic perception and production, sometimes even bringing into question the validity of some musical concepts and tools. Nevertheless, the persistence of musical practices that challenge experimental findings suggests that music psychological research can benefit from a richer and more flexible understanding of the music-temporal experience, especially given the relative simplicity of the stimuli, and the heavy Western European bias driving the choice of more ecological source materials. Conversely, findings on the cognitive mechanisms that fuel rhythmic experience can enrich our understanding of the effect of music on our body and mind, and by extension, inform musical performance and composition.

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Coursework Overview

This course emphasizes critical thinking and collaborative learning. Through weekly readings and listenings, you will learn how to evaluate music theoretical and scientific writing about musical rhythm by comparing approaches and research paradigms, posing critical questions to texts and musical works, and imagining ways to explore specific questions about perception and cognition. Throughout the semester, you will be called to engage in discussions with your classmates through off-line and on-line exercises. You will also participate in a series of tutorials aimed at providing the basic knowledge required to design and implement a pilot study (behavioral experiment). Two library workshops designed to help you with finding, evaluating, and using sources will also be offered.

The coursework is organized around two major projects that will put your newly acquired knowledge and skills to work. The first consists of a step-by-step experimental group project, which will involve observation and formulating of research questions, background research, experimental design, implementation of a pilot study, data analysis, and reporting results. In parallel, each student will be given the opportunity to explore a "big" question about musical rhythm, an exploration that will culminate in a mini-conference featuring individual research proposals to be judged by a (mock) panel of music cognition experts working for a major funding agency.

To help you discover the wonderful range of materials available for research at Yale and to promote proper use of sources, two library research workshops will be organized specifically for this course. The first, given early in the semester, will focus on types of research materials and online resources available through Yale as well as on the World Wide Web. The second, given later in the semester, will focus on how to search for, evaluate, and use sources for specific research topics. Instructions on appropriate citation practices and bibliographic references will also be provided as necessary.

A schedule of topics is included at the end of this document; specific assignment details will be posted on the virtual lab. *I like to keep an open dialogue about coursework and I encourage you to give frequent feedback on any issues you may be experiencing with coursework or in-class activities.*

Course Materials

Reading materials for this course will be selected from a variety of sources in both disciplines and include survey chapters on rhythm perception, production and cognition, selections from landmark music-theoretical and empirical research, and reports of more recent experimental studies. Listening materials will include representative works related to the assigned readings and issues discussed in class. All materials will be made available through the course blog (see above), and archived on the classes*v2 course site (https://classesv2.yale.edu/portal/).

Although **there is no required text for this course**, students are encouraged to invest in at least one book dedicated to the study of musical rhythm from a psychological perspective. Music majors and students who are most interested in the music-theoretical application of psychological findings will benefit most from:

- LONDON, J. 2012. *Hearing in Time: Psychological Aspects of Musical Meter*, 2nd ed. Oxford & New York: Oxford University Press.
- TEMPERLEY, D. 2004. *The Cognition of Basic Musical Structures*. Cambridge, MA: MIT Press.

Students who are most interested in the scientific applications of research on musical rhythm might find the following more relevant:

- THAUT, M. H. 2008. *Rhythm, Music, and the Brain: Scientific Foundations and Clinical Applications.* New York & London: Routledge.
- PATEL, A. D. 2008. *Music Language, and the Brain*. Oxford & New York: Oxford University Press.

Attendance & Course Policies

Punctual attendance in this class is essential. *Excessive absence and tardiness will have a detrimental effect on your grade*. All students will benefit from one "free" unexcused absence and tardiness. Beyond that, -0.5 point for each unexcused tardiness and -1 point for each unexcused absence will be deducted from the final grade.

Students are also expected to complete all assignments on time, including Web-based exercises that are due before class meeting times. Assignments that are late will receive a lower grade (one letter grade per class meeting). *No assignments will be accepted more than one week after the due date.* Extensions will be granted only in extenuating circumstances supported by a Dean's excuse.

The use of electronic devices during class meetings is *permitted only for the purpose of accessing materials pertinent to class activities*. Texting, reading email, and Internet browsing for other purposes *are strictly prohibited* and will have a detrimental effect on class performance.

Grading & Coursework Details

20% Participation (contribution to class discussions & in-class activities)
10% Quizzes
30% Written assignments & oral reports
20% Class project (group experiment)
20% Final presentation (mini-conference)

Note that there is no official percentage scale associated with letter grades at Yale, and that the conversion from numerical to letter grades in this course will be qualitative and take course grade distribution into account.

Participation: Because this course is a seminar, you will be expected to come to class having completed the reading and listening, engaged it seriously, and share your thoughts, questions, and findings. Students are expected to make *significant contributions* to the course blog by posting findings and engaging with other students' postings. Exercises dealing with aspects of rhythmic notation, composition, and performance will be assigned as needed.

Quizzes: Short quizzes will be given periodically to test reading comprehension, to ensure students are reviewing their class notes, and to emphasize important concepts. These will generally be announced ahead of time, *but not always*. There are no exams in this course.

Written assignments & oral reports: Reading assignments (15-20 pages per class meeting, less if the reading assignment is particularly dense) will often be accompanied with guiding questions and may be subject to short in-class quizzes. Listening assignments will usually involve some kind of critical or analytical component. Short and frequent responses to both types of materials, including oral reports and interactive writing assignments, will give you a chance to explore the subject matter in more depth, foster critical thinking, and help develop your presentation and writing skills.

Projects: Empirical research methods will be introduced through a series of in-class tutorials, in parallel with the design and implementation of a pilot study that explores the perception of musical rhythm. Students' individual contributions to this group project will be evaluated at each step of the process, including for the final report (structured abstract). Students are also expected to chose a topic for an individual project fairly soon in the semester. In the first half of the semester, students will conduct background research on their individual projects and check-in periodically with me on their progress, and a literature review will be due by midterm. In the second half of the semester, students will have the opportunity to share their work in progress with the class, and sollicit comments and questions. At the end of the semester, students will be askd to make a multimedia presentation of their research (mock grant proposal).

Academic Integrity Statement

Group study is acceptable and encouraged in this class. However, all assignments—unless otherwise announced—are to be completed by individuals, and are to be the original work of those individuals. Furthermore, per the *Undergraduate Regulations* of Yale College: "Cheating on examinations, plagiarism, improper acknowledgment of sources in essays, and the use of a single essay in more than one course [...]" constitute "offenses that are subject to disciplinary action."

SCHEDULE of TOPICS*

* This schedule is subject to change depending on the final configuration of the class, participants' specific interests, and guest visits.

UNIT 1	**MAPPING THE FIELD**
Week 0 8/28	- Introduction: What is musical rhythm?
Week 1 09/02 & 09/04	- State of research on rhythm & the question of universals - METHODS I: Reading experimental reports
Week 2 09/09 & 09/11	- Categorical perception, figural vs. metric hearing - RESEARCH WORKSHOP I: Database searching and online research **Individual project question must be approved by 09/15!**
Week 3 09/16 & 09/18	- Sensorimotor synchronization, metric entrainment, and Dynamic Attentional Theory - METHODS II: From question to hypothesis
Week 4 09/23 & 09/25	- Microtiming, Joint Accent Theory & tempo perception - RESEARCH WORKSHOP II: How to find, evaluate, and cite sources
Week 5 09/30 & 10/02	- Groove & embodiment - METHODS III: Issues in experimental design
Week 6 10/07 & 10/09	- Developmental & cross-cultural issues - METHODS IV: Measurement & data analysis
Week 7 10/14 & 10/16	- METHODS V: Implementation **Literature review for individual project is due!** *MIDTERM: Friday, October 17, is the last day to withdraw from this course.*

SCHEDULE of TOPICS (cont.)

UNIT 2	**INTERDISCIPLINARY MUSINGS**
Week 8 10/21	- METHODS VI: Interpreting findings & writing a structured abstract
10/23	**OCTOBER RECESS (no class)**
Week 9 10/28 & 10/30	- Phrase rhythm & metric dissonance - METHODS VII: The next step… **Structured abstract for group project is due!**
Week 10 11/04 & 11/06	- Rhythmic similarity & complexity - WORK-IN-PROGRESS I: Individual projects discussion
Week 11 11/11 & 11/13	- Polyrhythm, polymeter, and polytempo - WORK-IN-PROGRESS II: Individual projects discussion
Week 12 11/18 & 11/20	- Performance research and musical meaning - WORK-IN-PROGRESS III: Individual projects discussion **Individual project draft is due!**
11/25 & 11/27	**THANKSGIVING (no classes)**
Week 13 12/02 & 12/04	- New trends in interdisciplinary rhythm research - End-of-term wrap-up
12/06 to 12/11	**READING PERIOD (no classes)** Students may schedule individual meetings for final projects; *all outstanding coursework must be handed-in by the end of Reading Period.*
12/12 to 12/17	**FINAL EXAM (specific time TBA)** *Presentations of individual projects to (mock) panel of music cognition experts*