

# Musical Technologies and the Natural World

## Music 3240

*... the responsibility of the artist is to imitate nature in her manner of operation.* — John Cage

Spring 2017  
Lincoln Hall, B27  
TR 1:25-2:40

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Office Hours: Thursday, 3pm-5pm, or by appointment/email

Grading: Letter grade, 3 units

### I. Context:

Humans are defined by our ability to modify our environments, as much sonically as physically. Our penchant for technological evolution has given us tremendous power and influence over the natural world, yet these technologies are ultimately derivations or products of natural processes, and have given us as much insight into the behaviors of the natural world as destructive influence. Since technological advances have always been at the forefront of musical development in the West, this dialectic of human versus natural space has been a common theme throughout music history, and no more poignantly than in the twentieth and twenty-first centuries.

This course aims to explore the ways in which the musical arts have attempted to shade boundaries between natural and human sonic spaces, or to place these boundaries in full relief. This course will give students the opportunity to explore the sounds and sonic phenomena of the natural world both through the study of musical aesthetics and history, acoustics and perception of sound, and the production of their own their own sonic experiments. The dialogue between seminar-based theoretical discourse and hands-on exploration of sound is in an attempt to show the friction between the sounding natural world as it is imagined (Nature, with a capital “N”), and its tactile, fragile, complex reality.

### II. Specific Learning Outcomes:

By the end of this course, students will...

1. ... be able to identify concrete relationships between Nature and music;
2. ... have opened their ears to the sounds of their own sonic environments;
3. ... be comfortable exploring relationships between music and Nature through the analysis of texts;
4. ... be comfortable expressing and describing these sonic relationships through writing and open discussion;
5. ... be confident capturing, reproducing, and editing the sounds of their own environment using modern recording technologies;
6. ... show continued interest in the field through personalized research and creative exploration.

### III. Course Requirements:

- Attendance: Students are required to attend every scheduled class. In the event you are unable to attend class due to illness, please send me an email no later than noon on the day of class—please note that any assignments will still be due, except in cases of extreme danger to student’s health or mental well-being. In such cases, including family emergencies, official university business, or other urgent events, please promptly communicate the circumstances to me via email. Each absence will obviously affect your participation grade, but any unexcused absence in excess of two will negatively affect your overall grade by half a letter.
- Assignments: These are always due at the beginning of class to which they are assigned, and any late assignments will either receive a penalty or no credit at all. In the pursuit of sustainable practices, all assignments will be accepted electronically, but audio assignments must be uploaded to your designated Google Drive folder—if you have any doubts about whether the file will upload in time, please bring it to class early on a flash drive. I will not forgive late assignments because “the internet stopped working.” Please plan ahead.
- Plagiarism will not be tolerated. Please read section **VII. Academic Integrity**.
- Technology is central to the theme of this course, and as such students are welcome to use their computers for taking notes, accessing readings, using approved software, or researching topics in class. Phones must be silenced and put away. Any other activity—checking email, Facebook, Twitter, etc.—is not welcome and will negatively impact your participation grade.

### IV. Course Materials

There are no texts that need to be purchased for this course, and all required texts will be provided electronically via a shared Google Drive folder. Students are welcome to use their own audio recorders for assignments—if you would like to purchase one, please speak to me about this—but equipment will otherwise be available for checkout from the Lincoln Hall music library or from me directly.

Students will need to download the following software for their assignments: Reaper and Raven Lite 2.0. Reaper is a powerful digital audio workstation, on par with Logic, Pro-Tools, and Live, and is free\* to download and use (<http://www.reaper.fm/download.php>—\*they guilt-trip \$60 out of you, which is not wasted money). Raven Lite is a sound analysis software produced by the Cornell Lab of Ornithology (<http://www.birds.cornell.edu/brp/raven/ravenversions.html>), and you will need to request a free license for use. Both programs will be available to use in the adjacent studios, which you will have access to for as long as you are enrolled in the course.

### V. Grading criteria

- Attendance/participation 30%
  - Reading responses (15%), overall discussion participation (15%)
- Assignments (6) 30%
- Final project 40%
  - Proposal (5%), Presentation (10%), Final document (paper/audio/other: 25%)

#### *Grading scale*

97-100 A+	87-89 B+	77-79 C+	67-69 D+	00-59 F
93-96 A	83-86 B	73-76 C	63-66 D	
90-92 A-	80-82 B-	70-72 C-	60-62 D-	

## VI. Overview of Assignments

For seminar sessions, you will be responsible for 1) reading the assigned texts, 2) preparing a brief reading response (approx. 250-500 words) organizing your thoughts on the readings, and 3) at least once in the semester (depending on enrollment and overall scheduling) acting as discussion leader on an assigned reading.

**Reading Responses:** I am not expecting a play-by-play (I have read these too), but a clear distillation of your thoughts, reactions and questions on the authors' main points, perspectives, or apparent biases, with specific references to the texts themselves. Get meta, but be specific. You may provide brief quotations for context, but I want these written in your own words, not a vast collage of block quotes. These will be graded simply by completion (0 or 1, although if I feel your writing needs work, I may ask you to revise), and are due via email by noon before the start of class. Late submissions will receive no credit (see section III about "internet failures").

**Discussion Leader:** The student will be responsible for one assigned text which they will intimately study, preparing to 1) initiate discussion on the assigned text, 2) being able to clearly outline the author's main points, and 3) developing questions and thoughtful, insightful perspectives to further discussion on the subject. When acting as discussion leader, the student is not expected to turn in a reading response.

**Sound Assignments:** Over the course of the semester, students will prepare six assignments designed to correspond to themes and topics explored in the seminar. Specific technical requirements will be outlined and distributed as these assignments approach, and technological guidance will be provided as needed. The assignments are outlined roughly as follows:

- 1) *Focused Listening*: students will analyze the sounds of a chosen location, notating and describing these sounds' characteristics and interrelationships graphically;
- 2) *First Recordings*: students will record five contrasting soundscapes, juxtaposing them to demonstrate their similarities and differences;
- 3) *"Objets Sonores"*: students will collect 15 unique sounds and one impulse response, either in the field or in the studio;
- 4) *Imaginary Soundscape no. 1*: students will use their recorded sounds from assignment three to compose a virtual soundscape, asking the question, what is the difference between "soundscape composition" and "musique concrète?";
- 5) *"God's Musicians"*: students will analyze birdsong through mimetic practice;
- 6) and *Imaginary Soundscape no. 2 ("Meteorological Music")*: students create a piece using recorded sound that utilizes generative, stochastic, chance, feedback, or other process-driven methods. This assignment may be done in a group, provided an appropriate division of labor is clearly defined.

Assignments will be graded on a scale of 0-3, with "0" reflecting an assignment not turned in; "1" reflecting an assignment that was turned in, but appears to have been rushed, is incomplete, or otherwise rough around the edges; "2" for an assignment that met all assigned criteria and even succeeds at communicating something of the student's personality; and "3" for those very rare instances where the student demonstrated that they have no life outside of this class (I will generally discourage this). "2" is essentially an "A"—"3" is extra. Any assignments that received a "1" can be upgraded to a "2" if the student redoes their work. Any assignments turned in late will receive no greater than "1" in the best of circumstances.

**Final Project:** Reflecting the multimodal nature of this course, students' final projects ought to be a representation of their own continued interests, and as such each student will have the following choice: to write a seminar-style paper, 5-7 pages, on a topic of their choosing related to any of the aesthetic, musical, or technological subjects raised during the semester; or a substantial creative project, such as a sound installation, soundscape composition, sound map, listening station, musical composition, or other, accompanied by a 2-4 page document describing methods, models, and aesthetic considerations. This final project will unfold in four parts:

- 1) A final project proposal, 1-2 pages, to be submitted by April 11<sup>th</sup>;
- 2) A 20 minute colloquium-style presentation on your final project, to take place during the final class meetings (TBD);
- 3) Submission of all final project documents and materials by 11:59pm on May 14<sup>th</sup>;
- 4) An exhibition of student works to take place on May 9<sup>th</sup> in Lincoln Hall (students who have opted for the paper option will showcase one or two of their assignments).

### **VII. Academic Integrity**

For all assignments, students are required to abide by Cornell University's Code of Academic Integrity. Any work submitted by a student in this course for academic credit must be the student's own work. A copy of the code can be found at the following URL:

<http://cuinfo.cornell.edu/Academic/AIC.html>.

Violations of the Code of Academic Integrity, especially plagiarism, may result in a failing grade in the course. Students are urged to read and complete the exercises on "Recognizing and Avoiding Plagiarism" at: <http://plagiarism.arts.cornell.edu/tutorial/index.cfm>.

### **VIII. Accommodations for students with disabilities**

In compliance with the Cornell University policy and equal access laws, I am available to discuss appropriate academic accommodations that may be required for student with disabilities. Requests for academic accommodations are to be made during the first three weeks of the semester, except for unusual circumstances, so arrangements can be made. Students are encouraged to register with Student Disability Services to verify their eligibility for appropriate accommodations.

### **IX. Inclusivity Statement**

Cornell supports an inclusive learning environment where diversity and individual differences are understood, respected, appreciated, and recognized as a source of strength. It is expected that students in this class will respect differences and demonstrate diligence in understanding how other peoples' perspectives, behaviors, and worldviews may be different from their own.

## Preliminary Class Schedule

**Thursday, January 26<sup>th</sup>** — Introduction: listening modes, basic acoustics, sonic descriptors

**Tuesday, January 31<sup>st</sup>** — Foundations: The Soundscape, Acoustic Ecology, “Ear Cleaning”

Reading:

*Introduction and Classification*, from Schafer, R. Murray. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, Vt.: Destiny Books, 1993.

Wrightson, Kendall. “An Introduction to Acoustic Ecology.” *Soundscape: The Journal of Acoustic Ecology* 1, no. 1 (2000): 10-13.

*The Listener*, from Truax, Barry. 1984. *Acoustic communication*. Norwood, N.J.: Ablex Pub. Corp.

**Thursday, February 2<sup>nd</sup>** — “Tin Ears”: Tools for Soundscape Recording

Reading:

Westerkamp, H. (2002) ‘Linking soundscape composition and acoustic ecology’, *Organised Sound*, 7(1), pp. 51–56.

Levack Drever, J. (2002) ‘Soundscape composition: the convergence of ethnography and acousmatic music’, *Organised Sound*, 7(1), pp. 21–27.

Activity: basics of recording and editing

Assignment due: I. *Focused Listening*

**Tuesday, February 7<sup>th</sup>** — Defining Nature, Defining Technology

Reading:

*The Electric Revolution*, from Schafer, R. Murray. *The Soundscape: Our Sonic Environment and the Tuning of the World*. Rochester, Vt.: Destiny Books, 1993.

*How Technology has Changed Sound*, from Chion, Michel, and James A. Steintrager. *Sound: An Acouological Treatise*. Durham: Duke University Press, 2016.

*The Discourses of Nature*, from Soper, Kate. *What Is Nature? : Culture, Politics and the Non-Human*. Oxford: Blackwell, 1995.

**Thursday, February 9<sup>th</sup>** — Place and Sonic Boundaries

Reading:

From Corbin, Alain. *Village Bells: Sound and Meaning In the 19th-Century French Countryside*. New York: Columbia University Press, 1998.

**Tuesday, February 14<sup>th</sup>** — Noisy Neighbors, and other Art forms

Reading:

Atkinson, Rowland. 2007. Ecology of sound: The sonic order of urban space. *Urban Studies* 44 (10): 1905-17.

*Noise and Music: A Legitimate Distinction?*, from Chion, Michel, and James A. Steintrager. *Sound: An Acoulogical Treatise*. Durham: Duke University Press, 2016.

Russolo, Luigi., Robert Filliou, and Luigi Russolo. *The Art of Noise (futurist Manifesto, 1913)*. New York: Something Else Press, 1967.

**Thursday, February 16<sup>th</sup>** — Hidden Sounds

Activity: Build a buffered contact mic

Assignment due: II. *First Recordings*

**Tuesday, February 21<sup>st</sup>** — [no class, winter break]

**Thursday, February 23<sup>rd</sup>** — *Acousmania!*, part I

Reading:

*Pierre Schaeffer, the Sound Object, and the Acousmatic Reduction*, from Kane, Brian, *Sound Unseen: Acousmatic Sound In Theory and Practice*. New York, NY: Oxford University Press, 2014.

**Tuesday, February 28<sup>th</sup>** — *Acousmania!*, part II

Reading:

Amelides, P. (2016) ‘Acousmatic Storytelling’, *Organised Sound*, 21(3), pp. 213–221.

Assignment due: III. *Objets Sonores*

**Thursday, March 2<sup>nd</sup>** — *Acousmania!*, wrap-up

**Tuesday, March 7<sup>th</sup>** — “Biomusic”, part I

Reading: Kroodsma, Payne

Assignment due: IV. *Imaginary Soundscape no. 1*

**Thursday, March 9<sup>th</sup>** — “Biomusic”, part II (possible visit by Professor Ronald Raymond Hoy)

Krause, Bernard L. “The Habitat Niche Hypothesis: A Hidden Symphony of Animal Sounds.” *Literary Review* 36, no. 1 (Fall 1992): 40-45.

**Tuesday, March 14<sup>th</sup>** — Mimesis

Reading:

from Feld, S. *Sound and Sentiment: Birds, weeping, poetics, and song in Kaluli expression*. Philadelphia, PA: University of Pennsylvania Press, 1982.

Assignment due: V. *“God’s Musicians”*

**Thursday, March 16<sup>th</sup>** — Biological Processes as Music (visit by composer Anna Lindemann)

**Tuesday, March 21<sup>st</sup>** — “Nature’s Body”: Process, Chance, Randomness, and Materiality  
(Tudor, Lucier, et al)

**Thursday, March 23<sup>rd</sup>** — Feedback, Transduction

**Tuesday, March 28<sup>th</sup>** — “Nature’s Logic”: Mathematics, Stochastic Processes, and Spectralism

**Thursday, March 30<sup>th</sup>** — Nature and Music Theory  
Assignment due: VI. *Imaginary Soundscape no. 2 (“Meteorological Music”)*

**Tuesday, April 4<sup>th</sup>** — [spring break]

**Thursday, April 6<sup>th</sup>** — [spring break]

**Tuesday, April 11<sup>th</sup>** — Historical Underpinnings: The Sublime and the Beautiful  
Final project proposal due

**Thursday, April 13<sup>th</sup>** — Historical Underpinnings: “Teaching Birds to Sing” (a visit to the Kroch library)

**Tuesday, April 18<sup>th</sup>** — Transcendentalism: Thoreau’s Gift to Cage

**Thursday, April 20<sup>th</sup>** — Sustainability and Soundscape Conservation

**Tuesday, April 25<sup>th</sup>** — TBD (possible field trip to Cornell Lab of Ornithology)

**Thursday, April 27<sup>th</sup>** — Presentations

**Tuesday, May 2<sup>nd</sup>** — Presentations

**Thursday, May 4<sup>th</sup>** — Presentations

**Tuesday, May 9<sup>th</sup>** — Exhibition of Student Works in Lincoln Hall

**Sunday, May 14<sup>th</sup>, 11:59pm** — deadline for submission of final documents