Music and science seem to be two different disciplines, a classic example of C. P. Snow’s two cultures. Upon closer inspection, however, the two have historically enjoyed a very close and mutually fruitful interaction. This course is dedicated to unearthing the intricate and historically contingent relationships between the two fields from the eighteenth century to the present. Given such a rich history, we shall limit ourselves to an analysis based on material cultural. Specifically, we shall focus on how physicists and engineers provided musicians with new forms of aesthetic expression, such as the ability to increase in volume without increasing in pitch, or the use of electricity to generate sounds and tones never heard before. We shall also consider how music provided scientists and engineers with experimental resources to test natural phenomena, such as the testing of adiabatic phenomena and work relevant to the creation of the theory of thermodynamics. Texts read include those of Pesic, Jackson, and Pinch and Trocco.

Course Goals:

a. To understand the historical relationships between music and science
b. To read critically and carefully primary and secondary literature
c. To learn how to argue persuasively in an interdisciplinary context in both written and oral form.

Week 1:

Wednesday, 28 October: Course Introduction, Mechanics, and Requirements.

Week 2:


Week 3:
Monday, 9 November: Technology and Musical Performance in the 20th Century. Reading: Katz, Capturing Sound (ER), Chapters 1-4 (3 student presentations: vibrato and recording, phonograph in the US, jazz and repeatability of the phonograph).


Week 4:

Monday, 16 November: No Class.


Week 5:


Wednesday: 25 November. No Class: Thanksgiving and the Professor’s Birthday!

Week 6:


Wednesday, 2 December: Reading: The Moog Synthesizer, Part I. Reading: Trevor Pinch and Frank Trocco, Analog Days: The Invention and Impact of the Moog Synthesizer, pp. 1-31; 53-106 (3 student presentations on the Moog)

Week 7:

Monday, 7 December: The Moog Synthesizer, Part II. Reading: Pinch and Trocco, Analog Days, pp. 107-170 and 187-256 (3 student presentations on the Moog)
Wednesday, 9 December: Post Moog: Digital Music. Reading Katz, *Capturing Sound*, chapter 7; Paul Théberge, *Any Sound You Can Imagine* (ER), chapters 4 and 5 (3 student presentations, Digital Sampling, MIDI, etc.)

Week 8:


Topics for presentations: 20 minutes either of a talk based on the reading or a similar theme, or demonstrate a project relevant to the course (e.g., build and demonstrate a theremin).

OFFICE HOURS AND RELEVANT INFORMATION:
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EXPLANATION of GRADE DETERMINATION:
1 paper (5 pages), 35%, one project: 35 %, class participation 30%
OR
2 papers (5 pages each) 35% each, 30% class participation

Textbooks are on sale in the bookstore, or on two-hours reserve in Bobst, [http://bit.ly/1Ljc2LV](http://bit.ly/1Ljc2LV)