Final Project.

The Final Project involves writing an essay on a musical instrument of your choice (see below). The essay length is not fixed, but try writing at least 5 pages. Figures are welcome and necessary! Equations are welcome. Sound files are welcome too. Any format is ok, both electronic (Word, pdf, etc.) and hand-written essays will be accepted. Get your information from the internet. A good starting point is our course web page, Music and Musical Instruments section. Please note that a simple cut-and-paste from the links contained in that section is not enough, you should present a good-faith online research effort. It is not necessary to quote every source you use (only the major ones), it is understood that a compilation of the online sources is submitted. Try using your own language instead of pasting text.

Instrument choices:

- Woodwind instruments (pick one, e.g. clarinet)
- Brass instruments (pick one, e.g. trombone)
- String instruments (e.g. guitar, piano, harpsichord)
- Pipe organ
- Bow string instruments (pick one, e.g. violin)
- Pick your own instrument and surprise me

Your essay should include (but is not limited to):

- Intro to the instrument: what parts it is made of, instrument usage (e.g. in a symphonic orchestra)
- How does the instrument produce sound, what controls the sound frequency. Examples of things to discuss: flute or reed for a woodwind instrument, types of pipes for an organ, the role of the player’s mouth for brass instruments, how and where strings are deformed for a string instrument
- The frequency range. What notes can be played. If a keyboard is present, how it is tuned (what notes can be played, what the associated frequencies are)
- What defines the timbre of the instrument. You may want to discuss the harmonics present in the sound spectrum produced, for example
- Instrument acoustics. For example, whether there are any resonators present, and their role. Any instrument-specific information on how the instrument design affects its properties is welcome here
- Any additional facts. Fun facts are welcome.