

Exam guide MUS2640 - Fall 2024

Examination

- 4-hour school exam

Language of examination

You may write your examination paper in Norwegian, Swedish, Danish or English.

Grading scale

Grades are awarded on a scale from A to F, where A is the best grade and F is a fail. Read more about [the grading system](#).

Exam parts

I: The Sound of a Room

- The room could be described in terms of its physical characteristics, including size, shape, construction, and materials used. The soundscape theory, as developed by Schafer and colleagues, could be mentioned.
- Sounds heard can come from the building (e.g. ventilation sounds), outdoor sounds (e.g. traffic) and people present (talking, walking, typing, etc.). The sounds can be described in terms of frequency content or the sound theory of Pierre Schaeffer.
- For music purposes, it would be good to discuss reverberation (e.g. T60) and how they impact different music. Improving the room's acoustics for different genres could be done by adding sound-absorbing materials to reduce reverberation for amplified music or add hard materials and diffusers create longer reverberation for acoustic music. One could also imagine changing the shape of the room, such as lowering the ceiling or break up with walls.

II. Sound Visualization with Spectrograms:

- Key differences between the spectrograms include the frequency, dynamic, and time ranges (some without an explicit X axis). Stereo vs mono recordings.
- Sounds represent acoustic and digital sounds with varying content.
- Different settings include logarithmic vs. linear frequency scales, window size, color scales.

III. The Multimodality of Music Listening:

- The text should include descriptions showing an understanding of multimodal music perception/cognition as using multiple senses, not just hearing. This includes, in particular, visual, tactile, and vestibular senses.
- The main parts of the human auditory system include the outer ear, which collects sound waves and directs them to the ear canal. The middle ear amplifies the sound waves through vibrations and the inner ear converts sound vibrations into electrical signals that are sent to the brain via the auditory nerve. The cochlea is the key structure in the inner ear responsible for this conversion.
- The creation of a machine listening system could consider the non-linearity of human hearing, frequency range, critical bands, just noticeable differences, hysteresis effects.

IV. Research Article Summary:

- The most important is to have grasped that participants moved more in response to the more complex second stimulus.
- A discussion of puls and beat could start from the definitions provided in the article.
- Improvement points could build on those mentioned in the article but also include using more motion capture markers, having a more diverse range of participants, collecting physiological data, using observation methods to analyse behavior, more sophisticated audio analyses.