



Technology and Sound: Audio Workshop

COM 321-02/HM

Instructor: Dr. Andrew Klobucar

Office Hours: T/Th 1 – 2 pm

Office: CULL428

Classroom: Tier 106

Contact Information:

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Term: Spring 2025 (S2025)

Course Format and Objectives

This class will meet on Tuesdays and Thursdays in Tier 106 between 11:30 and 12:50 pm.

Required: Humanities 101/102. Technical prerequisites require consistent, secure access to a personal computer with up-to-date word processing and graphics software (e.g., HTML5 and/or a trusted video player) and high-speed internet, as most of the work will be read via the screen.

Please refer to the course schedule for details on the assigned readings. Students are expected to read and be familiar with the assigned weekly reading as the course progresses. In addition to reviewing the weekly reading, please create and keep track of your own reading notes, questions, and discussion topics.

Duration: 21 January – 7 May 2025. This course provides three credits for a Humanities and Social Sciences course at the undergraduate level.

Students should anticipate a workload of 6-9 hours per week, including class time, to fulfill course requirements.

Course Overview

General Course Description

This course introduces sound and its manifold uses and functions in the digital era, thanks to ongoing advances in audio and information technologies. Beginning with a broad survey of various timely innovations in recording, production and distribution devices over the last century, the course will offer learners an effective primer on how science and art have worked together to develop sound as an important media form in an array of genres and formats. Complementing this aim, learners will be introduced to specific core concepts and terminologies in audio technology, including sample rates, bit depth, waveforms, hertz and frequency situated in relation to current principles of human audio perception.

Learning Objectives

Learners will acquire a range of skills and knowledge throughout the course, positioning them to engage effectively with audio technology across diverse applications.

Primary skills and techniques learners will develop include:

- The ability to identify and explain key concepts in audio recording, mixing, synthesis, and sound design, particularly within the context of contemporary digital production.
- Proficiency in different audio production techniques and the capacity to use them to create original sound works and multimodal projects, including but not limited to music tracks, soundscapes, and audio for visual media.
- Skills in how to apply foundational programming concepts, such as logic, loops, and functions, to enhance their own audio production capabilities and facilitate creative audio coding practices.
- Fundamentals in the design and development of new audio tools suitable for various digital production environments, demonstrating both creativity and technical skills.
- An understanding of the historical and theoretical frameworks that have shaped sound as a media technology over the past century, exploring how these frameworks inform contemporary practices.

By studying key lineages informing the production and distribution of sound as a media technology over the last century, learners will also gain new skills to assess and apply hands-on techniques to produce creative sound works of their own.

Assignment List

Assignment and Description	Course Value
Participation Active engagement in class discussions and activities.	10 marks
Short Discussion Exercises <ul style="list-style-type: none"> Five Forums for In-class Discuss & Response will be set up based on assigned readings for non-honors students. Each Exercise will be worth 3 marks. Course Portfolio 	15 marks 5 marks
Academic Writing and Research <ul style="list-style-type: none"> Non-honors Investigative Report This multimodal report will investigate how contemporary audio technologies produce different listening experiences. Reports should focus on one or two audio effects discussed in class, aligning them with broader genres and perhaps even cultural movements. Honors Research Paper In place of all "Short Discussion Exercises, honors students will be assigned a single research paper based upon primary investigations of different theories of listening and their cultural and/or epistemological value. 	10 marks 15 marks
Multimodal Project on GenAI and sound technologies <ul style="list-style-type: none"> This final project will be a multimodal project for online viewing discussing the possible cultural and social effects GenAI will possibly produce in sound work in the next five years. Accompanying 3-5 minute recorded presentation of Multimodal Project 	15 marks 5 marks
Sound Composition Projects <ul style="list-style-type: none"> DAP 1 Sound Environments 10 marks DAP 2 Sound Arrangements 10 marks DAP 3 Sound Narratives 10 marks DAP 4 Sound Discoveries 10 marks 	40 marks
Total Course Value	100 marks!

Punctuality and Attendance

Each weekly in-class session will offer learners multiple opportunities to discuss and probe topics relevant to the course via individual input and group debate. This activity level in the course is worth ten **marks** and will be assessed according to the frequency and relevance of each contribution. Learners are encouraged to introduce material and ideas they believe are relevant to the topic at hand. Independent learner-led seminars can be scheduled one week in advance as requested. Learners are expected to attend *every* class.

Absences due to illness must be confirmed a *minimum* of **4 hours** before class by email to avoid penalty. In-class activities and general participation will account for ten **marks** and will be based on the frequency, relevance, and available quality of the learner's comments, questions, and observations. More than six **unexcused absences (3 weeks of the curriculum)** will result in automatic course failure; excessive unexcused lateness

of 20 minutes or more throughout the course will be considered one absence. Learners who expect to miss classes or exams because of religious observance or athletic events must submit to their instructors a written list of dates that will be missed by the end of the second week of classes.

Participation

This course is learner-centred, meaning that each class will offer you, the learners, the opportunity to lead discussions and questions on the topics presented. In other words, participation means more than attendance! Ten percent of the final grade will be based on the frequency and quality of your comments, questions, and observations, emphasizing quality. The quality is determined by, among other things, the relevance, insight and clarity of remarks.

All written assignments should conform to the guidelines for presentation set out in the class. The evaluative papers should be submitted by using proper MLA/APA style sheet as laid out in the most recent edition of the *MLA Handbook for Writers of Research Papers*.

- **If a class cannot be attended for any reason other than physical illness, I must be notified at least one day before the class is scheduled to enable me to prepare alternative access to the same material.**
- **Extra time to complete all individual assignments must be petitioned in writing at least one week (7 days) before the work is due or late penalties will be incurred.**
- **Assignment drafts or simple requests for assignment-specific advice must be scheduled at least 1 week before the assignment's due date if extra help is to be delivered in a timely fashion.**

Alternative submission access for late assignments and extra course material will be provided for each graded task; however, late assignments and missed classes outside these guidelines will be penalized. Late assignments will be deducted 10 percent of the task's course value up to 1 week after submission. Late assignments will be deducted 20 percent of the task's course value from 8 days to 2 weeks after the submission date. Late assignments will be deducted 50 percent of the task's course value from 15 days to 4 weeks after the submission date. Assignments missing for more than four weeks will not be accepted. No late work will receive commentary supplementary to its graded evaluation.

Course Syllabus and Schedule

The following is the current 15-week schedule for COM 321 Digital Media Futures. Please note that this schedule may change depending on the progress of the course and classwork.

Week	Topics/Readings	Assignments
Week 1 21/23 January	The Screen as a Media Form: Introductions <ul style="list-style-type: none"> Class Introduction Canvas/course technologies 	Class Introductions and Syllabus and Outline Discussions Read the syllabus and Outline for 23 January Discussions and any suggestions you might have.
Week 2 28/30 January	Sound Cultures: Sound and How we Experience it Building a Sound Culture: Music, Emotion, Language and Soundscapes Online Readings – Available on Canvas site <ul style="list-style-type: none"> Pierre Schaeffer, “Acousmatics.” Francesco Lopez, “Profound Listening and Environmental Sound Matter.” 	Reader Response/Short Discussion 1 Listening to Sound behind the Iron Curtain – 3 marks (Due Thursday 6 February)
Week 3 4-6 February	Signals and Transmissions: Analogue Recording and Sound Technologies Roundtable Discussions: New Audio Recording Technologies <ul style="list-style-type: none"> Physical Modelling and Sound Synthesis Aesthetics and Sound Technology I: Recording and Broadcasting 	Digital Audio Project #1: Exploring Sound Environments (10 marks) (Due 20 February) Forum Discussion 1 Due
Week 4 11-13 February	Roundtable Discussions: New Industries and Markets of Sound <ul style="list-style-type: none"> From Radioactivity to Radios Marketing Sound: Sheet Music, Broadway, and Broadcasts Online Readings – Available on Canvas site Luigi Russolo, “The Art of Noises: Futurist Manifesto” Morton Feldman, “Sound, Noise, Varèse, Boulez”	Digital Audio Project #1 Workshop

Week 5 18-20 February	<p align="center">Noise, Signals, and Silence: Constructing a Philosophy of Listening</p> <p>Roundtable Discussions: Modes of Listening</p> <ul style="list-style-type: none"> • Postwar Philosophies of the Listening Experience • Silence as Media <p>Computation and Sound: Aural Information</p> <p>Roundtable Discussions: Listening Experience and Media Technologies</p> <ul style="list-style-type: none"> • Early Analogue Computation and Sound • HipHop, the Break and the Art of DJing 	<p>Reader Response Short Discussion #2: Advances in Recording Technology – 3 marks (Due 27 February)</p> <p>Digital Audio Project 1 Due</p>
Week 6 25-27 February	<p>Online Readings – Available on Canvas site</p> <p>John Cage, “Composition as Process: Indeterminacy,” (Bloomsbury, 2004; 1958)</p> <p>Salomé Voegelin, from <i>Listening to Noise and Silence</i> (Continuum, 2010).</p>	<p>Reader Response Short Discussion# 2 Due</p> <p>Digital Audio Project #2 Building Sound Arrangements (10 Marks) Due 13 March</p>
Week 7 4-6 March	<p align="center">Computational Sound: Designing and Composing for Today’s Content Creators</p> <p>Digital Audio Workshops: Introduction to Ableton live</p> <ul style="list-style-type: none"> • History of MIDI • Sound Production Tutorial with Ableton Live 	<p>Reader Response Short Discussion #3: Listening vs. Hearing – 3 marks Due next week</p> <p>Investigative Report and Research Paper Topics Given (10 marks) Due 27 March</p>
Week 8 11-13 March	<p>Composing for a Digital Culture</p> <p>Sound and Synthesis: Audio Recording in the Digital Age</p> <p>Roundtable Discussion: Algorithmic Compositions</p> <ul style="list-style-type: none"> • Stochastic Composition and Randomness • Tools for Machine Musicianship • The Art of Feedback <p>Digital Audio Workstations and Production Techniques</p> <ul style="list-style-type: none"> • Synthesis and transformation of sound by computer <p>Digital Audio Workshop: Introduction to MIDI Software</p> <ul style="list-style-type: none"> • Mixing MIDI and Audio with Ableton Live 	<p>Digital Audio Project #2 Due</p> <p>Reader Response Short Discussion#3 due</p>
<p align="center">Week 9 Spring Recess (16-22 March)</p>		

Week 10 25-27 March	<p>Sound and Space: Contemporary Sonic and Conceptual Topologies</p> <p>Computation and Composition</p> <ul style="list-style-type: none"> • Electroacoustic Sound and Technology • From Auto-Tune to AI: Artificial Intelligence in Sound Composition and Art <p>Roundtable Discussion: Electroacoustic Sound Composition and the road to GenAI</p> <p>Online Readings – Available on Canvas site B. Truax, "Soundscape Composition as Global Music: Electroacoustic music as soundscape" S. Reynolds, "How Auto-Tune Revolutionized the Sound of Popular Music"</p>	<p>Reader Response Short Discussion #4: Were Humans Ever Necessary – 3 marks (Due 3 April)</p> <p>Investigative Report/Research Papers Due</p>
Week 11 1 April (no class 3 April)	<p>Gen-AI: Sound Production and Artificial Intelligence</p> <p>Roundtable Discussion: Machine Listening</p> <ul style="list-style-type: none"> • Introducing tools and approaches to GenAI Music <p>Online Readings – Available on Canvas site E. Deruty et al., "On the Development and Practice of AI Technology for Contemporary Popular Music Production."</p>	<p>Digital Audio Project # 3 Making Sound Narratives (10 marks) Due April 17</p> <p>Reader Response Short Exercise #4 Due</p>
Week 12 8/10 April	<p>Digital Audio Workshop: Introduction to Final Projects</p> <ul style="list-style-type: none"> • Project Planning • Producing a Multimodal Project • Using Gen-AI in Sound Composition 	<p>Reader Response Short Discussion #5: Sound Knowledge – Imagining Tomorrow's Audio Technologies – 3 marks</p>
Week 13 15/17 April	<p>Roundtable Discussion: Future Directions: New Interfaces for Musical Expression</p> <ul style="list-style-type: none"> • Sonification: Sound and Meaning and Auditory Data Display • Live Coding/Performance <p>Online Readings – Available on Canva site S. Voegelin, "Sonic Possible Worlds"</p>	<p>Digital Audio Project # 3 Sound Narratives Due</p> <p>Reader Response Short Exercise #5 Due</p> <p>Digital Audio Project #4: Making Sound Discoveries (10 marks) Due 1 May</p>
Week 14 22/24 April	<p>Immersive Media Interfaces: New Experiences of Sound</p>	<p>Gen-AI Workshop/Final Project Showcases</p>
Week 15/16 29 April/6 May	<p>Roundtable: Immersive Sound Technologies</p> <ul style="list-style-type: none"> • Apple Vision Pro and Immersive Performances • Artechouse Gallery in New York City <p>Online Readings – Available on Canvas site Alessandro Giuseppe Privitera et al. "The Role of Audio in Immersive Storytelling: a Systematic Review in Cultural Heritage"</p>	<p>Final Projects Due</p>