

# University of Waterloo Department of Music Conrad Grebel University College

## Music 275 – Music & Technology, Winter, 2025

*We acknowledge that in Kitchener, Waterloo, Cambridge and Brantford we are on the traditional territory of the Neutral, Anishnaabe, and Haudenosaunee peoples.*

**Instructor:** Cam McKittrick

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Class meetings: Tuesdays 4:00-6:50pm in Grebel 1208.

Office hours: Tuesdays 2:30-3:30pm and by appointment.

## Course Description

This course will be a hands-on introduction to the core concepts of music technology. You will learn about audio editing, digital signal processing, and MIDI, and will integrate these skills in the creation of original pieces of music. Repertoire review will provide historical and aesthetic context for your own work.

## Method

Music 275 requires weekly in-person class meetings. Masks are optional in teaching spaces. The class will be breaking into groups on most weeks to work with equipment provided by the university.

- Learning materials are provided for each week on our course. The provided materials are for personal use only.
- Written, video, and audio documents are provided as support in the Tutorials module and elsewhere. It will be easiest to use “quicktime” to view recorded video instruction so Windows users may have to go here: <https://support.apple.com/downloads/quicktime>
- Weekly assignments

## Materials

- Access to a personal computer on which you are able to install software.
- ***There is a mandatory lab fee and key deposit of \$100 (\$75 lab fee and \$25 key deposit). \$25 is refundable at the end of semester.*** Computers and software are available in the lab and the lab provides a space in which you can mix your work through monitors (as well as headphones). We will be using equipment stored in the lab during classes and some equipment is available for short-term sign-out for your use; The lab fee supports this equipment.
- Reasonably good headphones—earbuds and Bluetooth headphones are not preferred for audio work. Headphones are supplied for use in the lab (discussed in class)
- A license for [Ableton Live Intro](https://www.ableton.com/en-us/learn-live-intro/) (available at [ableton.com](https://www.ableton.com/en-us/learn-live-intro/)). The current cost is \$109 (CAD) minus educational discount of up to 50%. If you have not used the software before, there is a significant trial period for the advanced version. Live 12 Suite is available for your use in the Grebel lab throughout the semester.

## Topics to be covered

### Starters:

Listening

“What is sound?” – acoustic and psychoacoustic topics

“What is digital sound?” – important things to know about digital sound

### Context:

Creating music on the computer: How did we get here?

The repertoire and aesthetic of electronic music

### Recording:

Mixers, microphones, and how to use them

Getting sound into the computer

### Audio Editing:

Digital Audio Applications overview and practical use

Reading a wave-form

Cutting, pasting, and moving things around

Cross-fading

Managing files

### Digital Signal Processing:

Effects – basic categories: what they are, and what they do

‘Transparent’ and ‘Artistic’ use of effects

Envelope automation

Signal path

**MIDI:**

What it is, and how it works

Recording a keyboard performance onto the computer & playing it back

Editing MIDI data: quantization, cutting, pasting, etc...

Automation in MIDI

**Software synthesizers and the history of sound synthesis**

**Sequencing:**

Getting audio and MIDI coordinated

Thinking in tempo: loops, rhythm, et al...

**Music notation software (introduction only)****Mixing & Mastering:**

Using volume and EQ to mix a session

Getting a piece ready for different media

**Looking forward:**

Alternative performance interfaces for digital music

**Course Evaluation**

<b>Evaluation Item</b>	<b>Weighting</b>	<b>Description</b>
Lab Assignments	6 at 8% each	Demonstrate basic skills in digital audio (listening, recording, analyzing, editing, processing, mixing, etc.) and knowledge of common software examples.
Working together	20%	Collaborative music production assignment and live group show (7% and 13%) respectively
Repertoire Review	7%	A short, written review of three pieces from the course listening list.
Midterm Project	10%	A project of your own design, crafted to demonstrate mastery of applicable course topics married to your individual pursuits.
Final Project	15%	A project of your own design, crafted to demonstrate mastery of applicable course topics married to your individual pursuits.

Details concerning the assignments and projects will be available from the WATERLOO LEARN course site in written form. Due dates are found on assignment pages. ***Unless excused in advance, late assignments will carry a 5% per day deduction for three days, after which they will not be graded.***

## Schedule of Assignment Dates

Most of our activity in the course relies on cumulative knowledge. Mastery of each stage applies to the next and there are benefits to pre-studying materials posted in the week(s) ahead. **Without prior approval, late assignments will receive a 5% deduction per day for three days after which they will not be accepted.**

Lab 1 Thursday, January 16<sup>th</sup> at 11:59pm to the dropbox

Lab 2 Thursday January 23<sup>rd</sup> at 11:59pm to the dropbox

Lab 3 Thursday, January 30<sup>th</sup> at 11:59pm to the dropbox

Lab 4 Thursday, February 13<sup>th</sup> at 11:59pm to the dropbox

Midterm Project Tuesday, February 25<sup>th</sup> at 3pm to the dropbox

Lab 5 Thursday, March 6<sup>th</sup> at 11:59pm to the dropbox

Lab 6 Thursday, March 13<sup>th</sup> at 11:59pm to the dropbox

Repertoire Review Assignment Thursday February 6<sup>th</sup> at 11:59pm

Collaborative Production Assignment Tuesday April 1<sup>st</sup> at 3pm to the dropbox

Collaborative Performance Assignment (Due in class meetings beginning Tuesday March 11<sup>th</sup>).

Final Project: **Scheduled by examinations during the exam period, this is a mandatory in-person exam for the full duration.** The exam consists of a presentation of final projects (a concert if you will) and the opportunity to give and receive feedback on your work from me and from your peers.

## Policies

**Academic Integrity:** In order to maintain a culture of academic integrity, members of the University of Waterloo are expected to promote honesty, trust, fairness, respect and responsibility.

**Discipline:** A student is expected to know what constitutes academic integrity, to avoid committing academic offences, and to take responsibility for his/her/their actions. A student who is unsure whether an action constitutes an offence, or who needs help in learning how to avoid offences (e.g., plagiarism, cheating) or about “rules” for group work/collaboration should seek guidance from the course professor, academic advisor, or the Undergraduate Associate Dean. When misconduct has been found to have occurred, disciplinary penalties will be imposed under Policy 71 – Student Discipline. For information on categories of offenses and types of penalties, students should refer to Policy 71 - Student Discipline, <http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm>

**Grievance:** A student who believes that a decision affecting some aspect of his/her/their university life has been unfair or unreasonable may have grounds for initiating a grievance. Read Policy 70 - *Student Petitions and Grievances*, Section 4, <http://www.adm.uwaterloo.ca/infosec/Policies/policy70.htm>

**Appeals:** A student may appeal the finding and/or penalty in a decision made under Policy 70 - Student Petitions and Grievances (other than regarding a petition) or Policy 71 - Student Discipline if a ground for an appeal can be established. Read Policy 72 - **Student Appeals**, <http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm> Academic Integrity website (Arts): [http://arts.uwaterloo.ca/arts/ugrad/academic\\_responsibility.html](http://arts.uwaterloo.ca/arts/ugrad/academic_responsibility.html) Academic Integrity Office (UW): <http://uwaterloo.ca/academicintegrity/>

**Accommodation for Students with Disabilities:** *Note for students with disabilities: The Office for Persons with Disabilities (OPD), located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to lessen the impact of your disability, please register with the OPD at the beginning of each academic term.*

Turnitin.com: Text matching software (Turnitin®) may be used to screen assignments in this course. Turnitin® is used to verify that all materials and sources in assignments are documented. Students' submissions are stored on a U.S. server, therefore students must be given an alternative (e.g., scaffolded assignment or annotated bibliography), if they are concerned about their privacy and/or security. Students will be given due notice, in the first week of the term and/or at the time assignment details are provided, about arrangements and alternatives for the use of Turnitin in this course.

It is the responsibility of the student to notify the instructor if they, in the first week of term or at the time assignment details are provided, wish to submit alternate assignment.