

**Western University**  
**Don Wright Faculty of Music**

**MU9533b/9633b Electroacoustic Composition and Performance, 2023**

**Course Description**

A graduate level course in electroacoustic musical composition and performance. Students will compose music employing techniques of synthesis (such as analogue, modular, simulated modular, granular...), sampling and data manipulation. Live performance/improvisation and real-time digital sound processing (DSP) will be integral elements in their compositional work.

**Lecture Hours:** Mondays 10:30 am – 11:30 am; Wednesday 10:30 am – 12:30 pm

**Tutorials:** Rashaan Allwood, the CEARP GTA, will be available for weekly tutorials,  
Time TBA

**In-person meetings:** CEARP Studios, TC 344b, TC344c

**Online meetings (if any):** via Zoom

**Private Lessons** – In March, as students are working on their final projects, some class time will be replaced by private or semi-private lessons. Details, TBA.

**Prerequisites**

This course is restricted to graduate students in Composition. However, other graduate students may take the course with permission of the instructor and with permission of their department.

*“Please note that prerequisites are no longer automatically checked prior to course registration. It is the responsibility of each student to ensure that he or she has the specified prerequisites. Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.”*

**Instructor Information**

Instructor:

Dr. Paul Frehner  
Rm. TC 339  
Phone: 661-2111 ext. 85335  
Email: [pfrehner@uwo.ca](mailto:pfrehner@uwo.ca)  
Office hours: by appointment

Studio GSA:

Rashaan Allwood, [rallwood@uwo.ca](mailto:rallwood@uwo.ca)

## **Learning Outcomes**

Upon completion of the course students can expect to have:

- Broadened their knowledge of various types of synthesis such as subtractive synthesis, additive synthesis, FM synthesis
- Developed the knowledge and skill required to patch in Max/MSP for the purpose of composing electroacoustic works.
- Developed a basic level of competency in using either VCV Rack or the studio's Eurorack synth for composing generative or improvisational works
- Developed their improvisational skills by collaborating on structured electroacoustic/electronic improvisations.
- Gained a broader knowledge of current composers and trends in various electroacoustic genres
- Achieved a level of technical fluency in utilizing the audio hardware available in CEARP Studios C and/or B.
- Gained hands-on experience in all aspects of staging a concert of electroacoustic music.

## **Course Activities and Timetable of Assigned Work**

This primary focus of this course will be directed toward the creation and performance of electroacoustic/electronic musical works based on principles and techniques learned during the semester.

In the first half of the semester technical studies and creative sketches will be assigned on a weekly basis. Following this period students will work on a Listening/Radio Show assignment and then a Final Composition project.

It is understood that students are expected to engage in technical research for their creative work. The possibilities for this research are wide ranging and the exact nature of the research will be narrowed down through discussion during class time. Students are expected to be self-directed and exploratory in their technical research with the goal that they will have stretched their limits through this technical and creative process.

Course activities may consist of any of the following:

- Lectures and demonstrations on using the audio gear in CEARP Studio B or C
- Lectures and demonstrations on patching and programming in Max/MSP
- Lectures and demonstrations on patching and programming in VCV Rack
- Lectures on topics, terminology and concepts related to electronic music
- Soldering cables
- Tutorials with the GSA on any of the above topics
- Presentations and discussions of student creative work in a group composition lesson setting.
- Live performance and improvisation of electroacoustic sketches and compositions
- Discussion of any assigned readings or listenings

- listening to, analyzing and discussing recent electro-acoustic compositions by established composers as well as other types of audio artwork such as installations, sonic sculptures, etc...
- Composer Study Oral Presentation: see below
- demonstrations by both the instructor and students on the use of various audio hardware devices and software applications
- Occasional private composition lessons. These would replace regular class time.

### Studio Time

Each student will be able to reserve up to 5 hours of studio time per week through the online CEARP calendar on the OWL site. Students may have extra studio time on a first-come, first-serve basis, provided that the studio was previously unreserved. Studio time may be reserved no more than 1 week ahead of time.

### Assignments

There will be six assignments in the first half of the semester with the following due dates: Jan. 18, 25, Feb. 1, 8, 15, and March 1

### Listening or Electroacoustic Radio Show Assignment – Due March 15

Details - TBA

### Composition Project – due March 27

The final project will be a composition scored for 1+ performer(s) and electronics with duration of between 6-10 minutes. Exact details regarding this project will be established through in-class discussion. This composition will be performed in the year-end concert on April 4. An in-class run-through will take place the week before on either March 27 or 29.

### Year-End Concert – Tuesday April 4, 6:00 pm

The final concert is scheduled to take place on Tuesday, April 4, at 6:00 pm in Paul Davenport Theatre. Students will perform/present their compositions during this concert. Students will be responsible for promoting this event. In addition, each student is expected to assist in the setup, sound check, dress rehearsal and striking of the stage after the concert. These activities will take up the entire day from 8:30 am until approximately 10 pm.

## **Evaluation**

<u>Final Composition Project:</u> *, **	40%
<u>Listening or Radio Show Assignment:</u>	20%
<u>Assignments, Preparation:</u>	30%
<u>Participation:</u> in-class discussion and completing any assigned readings and listening	10%

\*N.B. Students will prepare their Final Composition Project for a premiere performance that will take place in the year-end concert. This performance/presentation will comprise part of the grade for the Final Composition Project.

\*\*Note that along with both composition/creative projects students will also submit a bound performance or listening score that contains technical details regarding the signal processing and data manipulation employed.

The following elements will be considered when grading the assignments, collaborative improvisation and the final composition project.

Effective technical use of the audio gear/audio software employed

Demonstrated understanding and implementation of techniques related to DSP, various approaches to synthesis, patching in Max/MSP, MIDI, mixing, sequencing, sampling etc...

The overall success of the completed works with regard to compositional considerations such as creativity and originality, form, dynamic shape, sonority etc...

## **Required Course Materials**

### Hardware

Personal computer  
Headphones

### Software

Max/MSP – a personal license of the software. A student or monthly license can be purchased from Cycling74's online shop.

<https://cycling74.com/shop>

VCV Rack 2 – you are required to open a personal account for this open-source virtual modular synthesizer and then download the app.

There is no fee for downloading the free version of this application onto your computer. Once an account is set up you can then proceed to download modules from the VCV Rack Library. Most modules are free, however, there are some commercial modules that must be paid for. For this course you will not be required to purchase any commercial modules.

<https://vcvrack.com/Rack>

N.B. There is a premium version of Rack 2 which has a cost of \$149 USD. For our purposes the free version is suitable enough.

## **Suggested Course Materials**

### Hardware

An audio interface

Microphone

MIDI keyboard

MIDI controllers

### Software

A digital audio workstation (DAW) such as Pro Tools, Logic, Cubase etc...

A variety of VST plugins could be useful

### Reference Texts

Max/MSP/Jitter Tutorials, Help files and Reference: integrated into the application

VCV Rack user manual – online

Other manuals for 3<sup>rd</sup> party VCV modules

Specific texts or articles as assigned

Samuel Pellman, *An introduction to the Creation of Electroacoustic Music*, Wadsworth Publishing Company ISBN 0-534-21450-9.

Scott Wilson, David Cottle, Nick Collins, *The SuperCollider book*, Cambridge Mass.: MIT Press, c2011.

David Miles Huber, Miles E. Runstein, *Modern Recording Techniques*, 4<sup>th</sup> ed., Boston, Focal Press, c1997.

Other hardware and software user manuals are available on the Mac Pro in the CEARP studio. They are mostly all available for download from their respective manufacturer's website. Hardcopies of some of these manuals are kept in the studio.

## **Recording Media and Storage**

Students are expected to make frequent backup copies of any work stored on the studio computer or on their personal computer. The University and the instructor will not be responsible for loss of data and student work.

## **Logbook**

The studio has a logbook. Students are expected to sign the logbook whenever using the studio. If there is a software or hardware malfunction they should describe the issue in general terms in the logbook and then notify the studio's Graduate Assistant.

## **Electronic Devices**

The use of mobile phones or other electronic communications device in class is prohibited. Please turn off your communications devices before entering the classroom.

## **Notes for Graduate Students Enrolled in the Course**

**Grading scale:** A= 80-100%, B= 70-79%, C= 60-69%, F= 0-59%

### **Statement on Academic Offences**

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic offence, as found at [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/scholastic\\_discipline\\_grad.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf)

### **Statement on Health and Wellness**

Students who are in emotional or mental distress should refer to [Health and Wellness](#) for a complete list of options about how to obtain help.

**Statement on Accommodation for Medical Illness** (adapted from the Senate policy on Academic Consideration for Student Absences–Undergraduates) at [https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_medical.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf)

The Graduate Program in Music recognizes that a student's ability to fulfill academic responsibilities may, on occasion, be impaired by illness or injury. To ensure fairness and consistency for all students, academic accommodation for work representing 10% or more of the student's course grade shall be granted only in cases where there is documentation indicating that the student could not reasonably be expected to meet the academic responsibilities. Documentation shall be submitted, as soon as possible, to the office of the Associate Dean (Graduate Studies), not to the course instructor.

Students with special learning needs or other circumstances are asked to inform the instructor as soon as possible so that necessary accommodations can be considered.

### **Accessible Education Western**

Western is committed to achieving barrier-free accessibility for all its members, including graduate students. As part of this commitment, Western provides a variety of services devoted to promoting, advocating, and accommodating persons with disabilities in their respective graduate program. Graduate students with disabilities (for example, chronic illnesses, mental health conditions, mobility impairments) are strongly encouraged to register with Accessible Education Western (AEW), a confidential service designed to support graduate and undergraduate students through their academic program. With the appropriate documentation, the student will work with both AEW and their graduate programs (normally their Graduate Chair and/or Course instructor) to ensure that appropriate academic accommodations to program requirements are arranged.

These accommodations include individual counselling, alternative formatted literature, accessible campus transportation, learning strategy instruction, writing exams and assistive technology instruction.

### **Statement on Gender-Based and Sexual Violence**

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence, either recently or in the past, you will find information about support services for survivors, including emergency contacts at [https://www.uwo.ca/health/student\\_support/survivor\\_support/get-help.html](https://www.uwo.ca/health/student_support/survivor_support/get-help.html). To connect with a case manager or set up an appointment, please contact [support@uwo.ca](mailto:support@uwo.ca) or call 519-661-3568.

### **Important Dates**

#### **Second Term**

**Mon. Jan. 9-Mon. Apr. 10**

First day of 2<sup>nd</sup> term classes  
Reading Week  
Family Day (Stat Holiday)  
Good Friday (Stat Holiday)  
Last day of 2<sup>nd</sup>-term classes

January 9, 2023  
Feb. 18-26  
Feb. 20  
April 7  
April 10