This course provides an introduction to Pro Tools, as well as the fundamental principles of digitally recording and editing acoustic music in ambient spaces, that covers every step of the process. We will focus on stereo microphone techniques to help musicians understand the processes involved in crafting acoustic records. Many musicians spend thousands of hours preparing for the stage but relatively little time (if any) learning how to turn those performances into recorded sound. A public performance, replicated in front of microphones, rarely produces a satisfactory outcome on a distribution medium such as the compact disc or streaming service, for the methods engineers and producers use to shape what listeners hear through loudspeakers have an enormous impact on the way people react to recordings. By providing information on the art of committing performances to disc, the course will enable musicians to turn sound into raw tracking data that can be digitally edited into cohesive listening experiences. *In other words, this is a practical course, not a musicological one.*

The course deals with both theory and practice and focuses on classical music (depending on the interests of students enrolled, some popular music can also be covered) – the nature of soundwaves and their behaviour in rooms, microphone types and the techniques of recording in stereo, tracking through Pro Tools, “in-the-box” editing and mixing with software plugins, and the preparation of finished tracks for delivery in compressed and uncompressed files.

After considering the theory behind sound recording and analyzing representative commercial recordings, most of the term will be spent gaining hands-on experience in editing, mixing, delivery – and the critical listening skills required for these activities.

Because of the problems associated with the physical distancing required by the provincial government, the class will be delivered in an online format. This means, of course, that we will not be able to undertake “in person” recording. Until the Covid-19 pandemic subsides, the course will concentrate on editing, mixing, and delivery. We have ample recorded material from previous years to use. The course will, however, cover recording techniques, but we will not have an opportunity to do “live” demonstrations of that material.

**DAW**

Our digital audio workstation will be Pro Tools. As the industry standard DAW, Pro Tools is an ideal platform for recording and editing acoustic music. Class members need to purchase or subscribe to Pro Tools. Educational pricing is available on the Avid website: https://shop.avid.com/ccrz__ProductDetails?viewState=DetailView&sku=DYNA20002&isCSRFtrue&portalUser=shop&utm_source=google&utm_medium=cpc&utm_campaign=PRO-EDU&utm_term=%2Bpro%20%2Btools%20%2Beducation&Adid=403978064360&matchtype=b&addisntype=g&gclid=Cj0KCQjwO35BRDVARIsAJU5mQVgkXSwfTgdDpvwKBvMCGOi80knsJwgg-WeKBJGGokIZ_dXfo043PMaAiCoEALw_weB&cecl=en_CA

**TEXT**


**REQUIREMENTS**

- to ensure that everyone keeps up with the theoretical principles, there will be 3 mid-term tests
- completed recording (exported 16/44.1 wav and mp3 files, plus a detailed written description of the procedures followed)
**GRADING**
3 quizzes – 60% – each one is worth 20% of the final mark – dates to be announced
Final project (completed recording) – 40% of the final mark

**ATTENDANCE**
Not everything covered in the lectures is included in the text for the course, and students will acquire much of the framework necessary for recording through material presented in class. Regular attendance is encouraged as part of the preparation for tests.

**CONSULTATION**
I am available for consultation outside class by appointment. Please contact me to arrange a time for a Zoom session. I prefer to conduct business “in person” rather than by e-mail, and I do not answer questions about course content by email. On the rare occasion that a student misses a lecture for legitimate and medically documented reasons, I will provide assistance with course material, but please be advised that I do not give private summaries of lectures. Students should rely on their peers to gather, and understand, material from classes they miss. See me only to clarify what you and your peers cannot grasp independently.

**PREREQUISITE**
None.

**GRADING SCALE**
A+ = 90-100%, A = 80-89%, B = 70-79%, C = 60-69%, D = 50-59%, F = 0-49%.

**ACADEMIC CONSIDERATION FOR STUDENT ABSENCE**
Students will have up to two (2) opportunities during the regular academic year to use an on-line portal to self-report an absence during the term, provided the following conditions are met: the absence is no more than 48 hours in duration, and the assessment for which consideration is being sought is worth 30% or less of the student’s final grade. **Students are expected to contact their instructors within 24 hours of the end of the period of the self-reported absence, unless noted on the syllabus.** Students are not able to use the self-reporting option in the following circumstances:

- for exams scheduled by the Office of the Registrar (e.g., December and April exams)
- absence of a duration greater than 48 hours,
- assessments worth more than 30% of the student’s final grade,
- if a student has already used the self-reporting portal twice during the academic year

If the conditions for a Self-Reported Absence are not met, students will need to provide a Student Medical Certificate if the absence is medical, or provide appropriate documentation if there are compassionate grounds for the absence in question. **Students are encouraged to contact their Faculty academic counselling office to obtain more information about the relevant documentation.**

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office. For the Western University policy on Consideration for Student Absence, see:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Consideration_for_absences.pdf
and for the Student Medical Certificate (SMC), see:
http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf
ACADEMIC CONSIDERATION FOR MISSING WORK
In cases where students are unable to submit work due to medical illness or compassionate grounds, if an online self-reported absence is submitted, or if appropriate supporting documentation is submitted to the Associate Dean’s office, and the accommodation is granted, then the missed assessments may be rescheduled or discounted in the calculation of the final grade for the course, at the discretion of the instructor. If neither a self-reported absence nor an appropriate supporting document is submitted to the appropriate office, then the missed assignments will receive a grade of zero.

ACADEMIC OFFENCES
Submission of work with which you have received help from someone else (other than the course instructor or TA) is an example of plagiarism, which is considered a major academic offence. 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: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

MENTAL HEALTH & WELLNESS
Students that are in emotional/mental distress should refer to the Health and Wellness at Western page (https://www.uwo.ca/health/) for a complete list of options about how to obtain help or to go to the Wellness Education Centre located in UCC room 76. Students in crisis in need of immediate care are directed to go directly to Student Health Services in UC11.

ACCOMMODATION FOR STUDENTS WITH DISABILITIES
Students work with Accessible Education Western (AEW, formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The accommodation policy can be found here: https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf

RELIGIOUS ACCOMMODATION
Students should consult the University's list of recognized religious holidays, and should give reasonable notice in writing, prior to the holiday, to the Instructor and an Academic Counsellor if their course requirements will be affected by a religious observance. Additional information is given in the Western Multicultural Calendar. http://multiculturalcalendar.com/ecal/index.php?s=c-uwca

PLAGIARISM
Students must write their essays and assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing, such as, footnotes or citations. Plagiarism is a major academic offence (see Scholastic Offence Policy in the Western Academic Calendar).

CONTINGENCY PLAN
In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will not change. Any remaining assessments will also be conducted online at the discretion of the course instructor.

RECORDING OF ONLINE ACTIVITIES
All of the remote learning sessions for this course will be recorded. The data captured during these recordings may include your image, voice recordings, chat logs and personal identifiers (name displayed on the screen). The recordings will be used for educational purposes related to this course, including evaluations. The recordings may be disclosed to other individuals participating in the course for their
private or group study purposes. Please contact the instructor if you have any concerns related to session recordings.

Participants in this course are not permitted to record the sessions, except where recording is an approved accommodation, or the participant has the prior written permission of the instructor.

**ONLINE ETIQUETTE**

Some components of this course may involve synchronous online interactions. To ensure the best experience for both you and your classmates, please honour the following rules of etiquette:
- Use your computer and/or laptop if possible (as opposed to a cell phone or tablet)
- “Arrive” to class on time
- Ensure that you are in a private location to protect the confidentiality of discussions in the event that a class discussion deals with sensitive or personal material
- To minimize background noise, kindly mute your microphone for the entire class until you are invited to speak, unless directed otherwise
- Unless invited by your instructor, do not share your screen in the meeting
- In order to give us optimum bandwidth and web quality, please turn off your video camera for the entire class unless you are invited to speak
- Be prepared to turn your video camera off at the instructor’s request if the internet connection becomes unstable

The course instructor will act as moderator for the class and will deal with any questions from participants. To participate please consider the following:
- If you wish to speak, select the blue “raise hand” function and wait for the instructor to acknowledge you before beginning your comment or question.
- Kindly remember to unmute your microphone and turn on your video camera before speaking.
- Self-identify when speaking.
- Kindly remember to select the “raise hand” function again to lower your hand, mute your mic and turn off your video camera after speaking (unless directed otherwise).

General considerations of “netiquette”:
- Keep in mind the different cultural and linguistic backgrounds of the students in the course.
- Be courteous toward the instructor, your colleagues, and authors whose work you are discussing.
- Be respectful of the diversity of viewpoints that you will encounter in the class and in your readings. The exchange of diverse ideas and opinions is part of the scholarly environment.

Note that disruptive behaviour of any type during online classes, including inappropriate use of the chat function, is unacceptable. Students found guilty of “Zoom-bombing” a class, or of other serious online offenses, may be subject to disciplinary measures under the Code of Student Conduct.
LEARNING OUTCOMES

Participants will gain an understanding of and practical experience in:

*The Nature of Sound and Its Electrical/Digital Representation*
- complex soundwaves
- the reflection of soundwaves in enclosed spaces and the nature of reverberation
- the differences between analog and digital audio
- bits, bit depth, pulse code modulation, sampling, quantization, encoding, dither, resolution
- AD and DA converters

*Production*
- common microphone types: condenser (pressure and pressure-gradient), dynamic, ribbon
- frequency response of microphones, directional patterns of capsules, distance factor
- proximity effect and issues relating to phase
- stereo playback and stereo microphone techniques
- coincident pairs (X-Y, Blumlein, M/S), near-coincident arrays (ORTF, NOS, DIN, OSS), spaced microphones (A-B, Faulkner, Decca tree)
- tracking – principles of critical listening, setting levels, room ambience

*Post-Production*
- digital filters (high pass, low pass, band pass, parametric) and EQ
- control of dynamic range – compressors, limiters, dynamic EQ, de-essers
- artificial reverberation – digital reflection simulation, convolution
- commercial plugins

*Delivery*
- file types – containers & codecs, uncompressed (wav, aiff), lossless compression (flac, alac), lossy compression (mp3, aac)
- file size
- loudness and meters (measurement standards, terminology of metering, true-peak meters, target levels, loudness practices)
- commercial plugins

*Common Recording Strategies*
- stereo miking of solo instruments, small ensembles, singer-songwriters
- advantages and disadvantages of various techniques

*Digital Editing and the Preparation of a Master Copy*
- digital audio workstation – features of Pro Tools and its keyboard shortcuts
- compilation of the final version from various takes
- mixing, metering, and the production of a master copy (use of EQ, dynamic range control, reverberation)
- preparation of the master for delivery on CD and for streaming services