Music 3771a/9735a – Pro Tools Recording for Classical and Acoustic Pop Music

Joint Undergrad (3rd- & 4th-year students) and Grad Course

Dr R. Toft
Term 1, Thursday 9:30-12:30; TC 200 (later in term MB 242)

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 both classical and pop 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 – 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 actual recording – tracking, editing, mixing, delivery – and the critical listening skills required for these activities. The practical sessions (held during regular class time) will involve groups of students in recording and post-production situations during which the participants will be the performers, producers, and editors (soloists or small ensembles in the classical field and singer-songwriters in the pop field).

Classes will be held in Studio 242 in the Music Building (which has the acoustics we need for learning to record in ambient spaces), as well as TC 200, the Mac Lab in Talbot College (theoretical sections and audio editing).

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. Pro Tools and the plugins we need for editing are installed on the workstations in the Mac Lab. However, everyone should purchase or subscribe to Pro Tools for working at home (educational pricing for subscriptions is just under CDN$150 for 12 months), own a pair of closed-back headphones for working in the Mac Lab, and have a USB drive with at least 8 GB of storage space (no files may be stored on the lab’s computers). The course is exclusively Mac based, and lectures and course materials are optimized for the OS X environment. PC users will be expected to work in the Mac Lab and submit assignments through the OS X platform (no exceptions).

TEXT
Robert Toft, Recording Classical Music (the book is scheduled to be published by Focal Press in late 2019, but before then it is available as a course pack in the Bookstore) – all the information in the book is directly applicable to recording singer-songwriters in the pop field

REQUIREMENTS
• regular attendance at both lectures and practical sessions
• students will be assigned to groups that will be responsible for tracking during class
• to ensure that everyone keeps up with the theoretical principles, there will be regular quizzes
• a written description of the recording project to be undertaken (details of music, mic locations, tracking procedures, etc.)
• completed recording (submission of the Pro Tools folder, plus exported 16/44.1 wav and mp3 files)
**Grading**
3 quizzes – 30%
Written plan for the final project – 20%
Final project (completed recording) – 50%

**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 see me either before or after class to arrange a time. I prefer to conduct business ‘in person’ rather than by e-mail, and I do not answer questions about course content by e-mail. 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.

**Protocol**
Cell phones are not permitted in class, and the use of personal listening devices (iPod, etc.) is prohibited.

**Prerequisite**
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 the 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.

**Non-Medical and Medical Absences / Mental Health**
Students are responsible for making up any missed classes or assignments as soon as possible. In order to ensure fairness and consistency for all students, academic accommodation for work representing more than 30% of the student’s overall grade in the course shall be granted only in those cases where there is documentation in the form of a completed and appropriately signed Student Medical Certificate (SMC) indicating that the student was seriously affected by illness and could not reasonably be expected to meet his/her academic responsibilities, or the equivalent documentation for non-medical or compassionate grounds.

Students seeking academic consideration must communicate with their instructors no later than 24 hours after the end of the period covered by either the self-reported absence or SMC, or immediately upon their return following a documented absence, to clarify how they will be expected to fulfil the academic expectations they may have missed during the absence. Documentation, if required, shall be submitted to the Office of the Associate Dean, Undergraduate (TC210).

Note that the new Self-Reporting Absence Portal may not be used for requesting academic relief for work worth more than 30%, or for Final Exams scheduled during the official examination period.

Students who are in emotional/mental distress should refer to Mental Health @ Western https://www.uwo.ca/health/mental_wellbeing/ for a complete list of options about how to obtain help.

**Scholastic Offences**
Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following website: http://www.uwo.ca/univsec/handbook/appeals/scholoffence.pdf.
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).

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 micing 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