MUS 3739b: Digital Mixing and Mastering
Dr. J. A. Hodgson (jhodgs5@uwo.ca) // MWF 2.30-3.20 @ NCB 125 (IMC Lab)

A continuation of work done in its prerequisite, MUS 2736, Digital Mixing and Mastering focuses explicitly on the mixing and mastering stages of record production. Over the course of this semester, students will learn to mix records according to conventional and generic standards, and then they will begin to refine that process to find personal approaches. Coursework culminates in the creation of a 3 track “mixing portfolio.”

Required Materials.

- 2 x 16+ GB USB sticks

Evaluation & Course Structure.

Participation, Homework & Quizzes (40%): Over the course of this semester, we will work on 3 “Sandbox Mixes” in class and for assignments, transforming each — step by step — from a folder of audio files into a professionally mixed and mastered track, ready for distribution. You should always have one USB with all three Sandbox mixes ready for submission at the beginning of each class.

Mixing Portfolio (60%): Due at the start of last class (April 11), final projects will comprise a mixing portfolio of 3 tracks. I will supply the audio files to be mixed, though students may substitute one supplied set of files for a mix of their choosing. We will discuss this project in greater detail in class.

Schedule of Topics

January 6
  Introduction to the course & the course concept

**UNIT ONE: PREPARING FOR MIXING**

January 10
  What is a mix?
  Soundboxing

  *Homework: Senior Part 1 (Chapters 1-4)*

January 12
  Preparing for mixing: acoustics, environment & signal
  Routing: sends, busses & submixes

  *Homework: Reference track assignment & 5 Soundboxes*

  *Senior Chaps 6 & 7*
January 15
Preparing for mixing: editing (topping & tailing, swapping out for samples)
Reference Mix Routine: acoustics & immersion

*Homework: Senior Chaps 5 & 8*

January 17
Preparing for mixing: timing & tuning (Flex Editor overview)
Session File Legibility: Naming, Color Coding, Arrange Window Buss tracks

*Homework: All 3 session files completely groomed and ready for mixing (swap out the drum kit for samples on one track, and double the drum kit using samples on the other)*

January 19 (no class)

UNIT TWO: EQUALIZATION

January 29
Equalization: Kinds & Uses
Core Concepts: Masking, Balance & Tone

*Homework: Senior Chap 11*

January 31
Filters: HPF/LPF, Shelving, Bandpass & Notch filtering

February 2
The Subtractive Habit & the Problem of “Sweeping”
EQing for “width” and EQing for “length”

*Homework: EQ all 3 session files*

February 5
Tonal EQ

*Homework: Senior Chap 12*

February 7
Distortion (“lift” bass/2bled vocals)

*Homework: Try applying overdrive to bass and doubled vocals on all three session files. Save as “alternate” versions of your mixes, in a folder titled: “Experiments”*

*Senior Chap 9*
UNIT THREE: DYNAMICS

February 9
Compression: Controls review & Gain Reduction Circuitries
Compression Concepts: Fader Instability/Docking v. Tone/Hype

Homework: Finish EQing all 3 session files.

February 12
Attack & Release: Focus on the Bass, Hi-hats & Vocals
The Stavrou method: AReRaTh

Homework: Compress the bass & hi-hats on all 3 session files. Use the Stavrou method on bass.

Senior Chap 14

February 14
Compression as EQ, 1: Understanding the Side-chain
Side-chaining for fun & profit: pumping and ducking

Homework: Side-chain the drums and bass on all 3 sandbox session files

February 16
Compression as EQ, 2: Understanding the Side Chain Filter

Homework: Ensure you are completely caught up with everything.

February 19-23: READING WEEK

February 26
Compression Concepts 2: Parallel (OH) & Sequential Compression (vox)

Homework: SCF, and sequentially compress, the lead vocals on all 3 session files. Parallel compress the drum OHs and send the parallel line to the OH submix. Place these in your “experiments” folder.

February 28
Gating: Controls review & General Uses
Envelope Shaping: Noise (gtr) & Reverbs (snare)

Homework: Noise gate guitars/pad instruments, if necessary, and gate the snare reverb to tempo
March 2
Envelope Following: Keyed Gating (kick and groove)

*Homework: key a tuned “sub” sine wave to the kick; key the bass to the snare for groove*

March 5
Keying for Groove: Envelope Following the snare
Keying for Precision: Envelope Shaping on Backing Vox

*Homework: Key pads to the snare/clap. Key backing vocals to the lead*

March 7
Expansion: Dealing with Bleed
Multiband compression: an alternative to the SCF

*Homework: Play with expanding on the drum kits and multi band compression on the vocals. Place these in your “experiments” folder.*

Senior Chap 13

March 9
Dynamic EQ: De-essing
Setting up your own De-esser

*Homework: Set up a de-esser on your lead vocal tracks. Play with a de-esser on the stereo bus targeting hi hats, especially on the electronic track.*

Senior Chap 17

UNIT FOUR: REVERB & DELAY

March 12
Delays: Kinds & Uses

March 14
Ducked Delay: Focus on Vocals

*Homework: Create a ducked delay line on your vocals and use a ducked delay for a very thick reverb on your snare. Place these session files in the “experiments” folder.*

March 16
The Haas Effect: “Wedging” in 3D using Sample (very short) Delay

*Homework: Sample delay your pads.*

Senior Chap 16
March 19
Reverbs: Kinds & Uses

March 21
Reverb for Distinction: Vocals
Reverb for Docking: Guitars

*Homework: Use reverb to create both “macro” glue and “micro” distinctions*

March 23
Modulation Processing: Phase, Flange & Chorus

**UNIT FIVE: MASTERING (YOUR “FIRST” LINE)**

March 26
Understanding your Environment & Line
What do headphones do to the spectral balance?

*Homework: Find mastering references*

*Senior Chap 19*

March 28
Loudness & DR: the modern fetish
Stereo buss compression: Glue v. Hype

*Homework: Use a “glue” and a “hype” compressor on the stereo bus of your sandbox mixes. Bypass each, in turn, when you are working on the other. Bypass both on the session files you submit to me.*

March 30
Filtering: to HPF or not to HPF?
Filtering: when to notch & when to use a dynamic EQ?

*Homework: Setup mastering sessions for all 3 session files, and place these in a folder on your USB called “mastering. Choose a reference track for each session file, and route it into your “line”.*

April 2
The New Loudness Standards: Understanding LUFs

*Homework: try to achieve the same loudness reading as your chosen references for all 3 premasters. Consider what, specifically, is impeding you from achieving the same loudness and “resolution.”*

*Senior Chap 18*
April 4
Stereo Image: No M/S? No problem! Bandpassing & Sample delays
Slapping on a Limiter

April 6-9
Open work time

April 11
Final Projects Due.

Submission Policy.
I do not accept late assignments nor do I grant extensions. If students miss a deadline without prior approval and/or medical documentation — or, in the case of an emergency, without documentation and approval obtained from me within one week of the initial due date — a failing grade is automatically applied. To be fair to everyone in this class, and to ensure that your final grade accurately represents the level of studentship displayed in my class, I make absolutely no exceptions to this policy.

Expectations for Final Grades.

Students should have realistic expectations for final grades. Given the cumulative nature of this class, and the labor intensive nature of course work, class averages for a typical offering of this course range from 71% to 76% at the very highest. A final grade of 80%+ is difficult to achieve but not entirely uncommon. A final grade of 90% is extremely rare and can account for anywhere from 0% to 5% of total grades.

Letter Grades and Percentage Points.

At the University of Western Ontario, letter grades correspond to the following percentages:
A+......... 90%  A.............80%  B............. 70%  C............. 60%  F............. 00%

Missed Classes.

I am available to answer questions about course materials from students who have missed a lecture for legitimate and documented reasons, during the designated office hours specified on the first page of this syllabus. However, I do not give private lessons. Students should rely on their peers to gather, and acquire, information from the lessons they miss. Only once you have done your due diligence in this regard, and continue to experience difficulty acquiring the material, should you contact me for extra help.