

MUAE 3100–003– Intro to Digital Audio Workstation

Syllabus – FALL 2026

Meets on: Tuesdays / Thursdays - 12:45pm – 2:05pm

Location: 287

Instructor: Harlan Hodges | harlan.hodges@unt.edu

Office hours: Tuesdays 3:00p - 4:00pm, MUSI 240

[Music Computer Lab and Studio](#) MUSI 238-239

Virtual Computer Lab:

[MyLab virtual computer lab](#) *connection guide*

[Audio Streaming](#)

Special Events – Mark your calendars:

Guest Artist Visit - Schedule TBD

HOLIDAYS:

NO CLASS: September, 7th - Labor Day

NO CLASS: November 23th - 29th - Thanksgiving Break

Course Description:

The advent of computer-based music production fundamentally changed how music is made. A digital audio workstation performs the same core functions as the analog studio — recording, playback, sampling, and effects — while also enabling techniques analog technology never could, such as granular synthesis and algorithmic composition, and integrating every stage of the process into a single environment. This course covers that history and its effect on modern music-making, and develops the critical listening and judgment required to use these tools effectively, since technology alone does not determine musical quality.

This course will cover basic techniques for producing music with computers by addressing making sounds "in the box" using built-in software (using Cubase, Ableton Live, Logic Pro, and Pro Tools) as well as recording audio and post-production. These skills are learned through study and analysis, but also through work on projects. To address this requirement, students will be required to handle a constant flow of hands-on practice through fulfillment of bi-weekly assignments.

Course Learning Objectives:

- Familiarize themselves with basic notions of music production and apply them for the creation of original music and for groups and class discussions using acquired terminology
- Learn digital audio editing and mixing techniques and apply them for various recording and mixing projects.
- Devise and record custom samples based on their own creative ideas
- Create a variety of rhythmic patterns (also known as beats) for sampled drums and other percussive sounds
- Aurally identify recording, post-production, mixing techniques and electronic music techniques.
- Create their own sounds from scratch by exploring concepts of sound synthesis and sample manipulation

- Develop an aesthetic judgment to choose from and apply several music production, recording and mixing techniques learned
- Collaborate with other musicians in open-ended assignments toward the composition of original music
- Articulate constructive criticism on the work of their classmates and receive feedback from others on their own work.

Course requirements:

A 3-credit course means a nine-hour commitment. Three of those hours we will spend in class. This means you should be prepared to spend up to 6 weekly hours outside of class working on assignments and going over material.

Electronic devices are not permitted during lectures, absolutely no phone usage unless explicitly allowed by the instructor. Browsing the internet or social media will not only make you lose your focus; it will also harm your grade.

Assignments, Asynchronous learning and Class Posts:

Student work for this course consists of:

- 7 Assignments, broken-up into 10 assignment submissions
- 30 Asynchronous learning tasks
- 40 Class Posts

Evaluation:

Assignments 60%

Assignments are graded for completeness, technical ability (using techniques described in lecture) and creativity

Asynchronous Learning 20%

May include music listening, learning modules or preparation for a class meeting. Assessed for completeness and critical thinking. Lowest two grades will be dropped before averaging. Asynchronous items become unavailable after their deadline.

Class Posts 10%

Posts or activities assigned (and often completed) during class time, assessed for exploratory spirit and technical execution. Lowest two grades will be dropped before averaging. Class posts become unavailable at midnight of the day they are assigned.

Participation & Professionalism 10%

A strong sense of organization and respect for the equipment is a must in any recording studio. Working collaboratively to keep the space alive but organized is a sign of professionalism.

Attendance 30%

It is very important to come to class, be active & ask the questions you need answered.

Policies:

Participation, Attendance, Scheduling:

Do not use computers, phones, or other electronic devices for non-class related activities (social media, shopping, work for other classes, etc.) during class meetings.

More than 2 absences will affect your participation grade. Any sickness, emergencies, mandatory school related events, religious holidays, high-paying gigs or professional auditions are considered excusable absences IF YOU COMMUNICATE with the class instructor. Otherwise, you will be counted as absent on the days you miss.

DO NOT schedule an end-of-semester jury that will affect your ability to attend our regular in-class meetings!

Assignments, Posts:

All Assignments are due by 12am Central Standard Time on their due date. This way we have them in before we meet for class! Posts are due by the EOD of each class meeting they align with.

Grades:

Grades will be posted to Canvas within 1 week upon submission.

Late work:

Late work will be accepted at 50% only, until one week after the deadline.

OneDrive:

This class will have a OneDrive folder. Each student will create their own subfolder where all their work should be uploaded. An organized OneDrive folder is essential for a successful completion of the course. More details will be given by the instructor.

Communication and Submissions:

All assignment submissions must have at least these two elements:

- a .mp3 file posted on the corresponding Canvas discussion
- all files pertaining to that project in the corresponding OneDrive subfolder.

Materials:

- We will use the equipment in room 287. You can use your own laptop/headphones if you'd like, as long as it is equipped with the required software for class. More details in the first week.
- For work outside of class time, use the [Computer Lab](#)

Schedule:

I. Basics of Digital Audio Workstations

Tuesday, August 18 - Topics 1 and 2

Introduction — The DAW

Introduction to the course and instructor. Why learn DAW's?

Basics of Digital Audio Workstations — DAW demos

Introduction to Ableton Live. DAW flow (tracks and Master). Faders. Windows / views, tracks, tools. Tracks at a glance. MIDI, Audio, Instrument. Audio loops. Basic selecting & Zooming Audio Tracks. Selecting area to export. Exporting audio (mp3 and wav / aiff options).

[Basics of DAW's](#)

Thursday, August 20th – Topics 3 and 4

Basics of Digital Audio Workstations — Logic / Cubase demo

Introduction to Logic Pro and Cubase. DAW flow (tracks and Master). Faders. Windows / views, tracks, tools. Tracks at a glance. MIDI, Audio, Instrument. Audio loops. Basic selecting & Zooming Audio Tracks. Selecting area to export. Exporting audio (mp3 and wav / aiff options).

[Basics of DAW's](#)

Digital audio basics. Audio recording & settings.

Project Session Settings, Sample Rate, Buffer Size. Basic recording with laptop built-in mic. Basic I/O. Using different Buffer Sizes for recording and mixing.

[Digital audio basics. Audio recording & settings.](#)

Tuesday, August 25th – Topic 5

Project structure, file management and cloud

File types. Session / Project files. Folder structure. Logic: folder vs package. Creating New Projects, Finding files Saving: Save vs. export. Backing-up, saving older versions. Using a cloud service: OneDrive. Sharing projects.

Importing stems. Checking that stems are not Warped / Flexed.

[Project structure & file management \(slides\)](#)

[File management and cloud](#) (doc)

Resources

[AFFORDABLE SOFTWARE FOR PRODUCERS AND MUSICIANS](#)

[Mike Senior's Multi-track library](#)

[How to share projects](#) – further reading re: Ableton Live folder structure

II. Time and beats

Thursday, August 27th – Topic 6

Intro to MIDI and drum beats

Pulse, meter, Beat division and quantization.

MIDI, Grids. MIDI Overdub.

Four on the floor & basic patterns.

[MIDI, Grids, Beat division and Quantization](#)

Monday, September 4th NO CLASS - LABOR DAY - University CLOSED

Wednesday, September 6th – meeting 7

Classic drum patterns

Son Clave. Variations of Rock and Soul / Funk patterns.

Contemporary Hip Hop Drum beat (Kendrick Lamar “Alright”)

Tuesday, September 1st – Topic 8 and 9

Deviating from the grid

Music: L-Gante: Bzrp Music Sessions, Vol 38

Feel & Grooves. Ableton’s groove pool.

Extracting groove patterns from audio.

Sequencers

Drum sequencers. The Mono Sequencer. Using sequencers for: melody, harmony, drums. Chance and Probability.

Recording the MIDI output of an improvisation with sequencers. Drums sound design.

[Drum machines, sequencers and samplers](#)

Resources

[Melvin Bliss - Synthetic Substitution \(Drum Break - Loop\)](#) - sampled in Public Enemy’s “Don’t Believe the Hype”

[Principles of Basic Drum Beats for Rock, Part 1](#)

[The Ultimate Guide To Soul And Funk Drumming](#)

[22 Essential Soul Beats For Drummers - DRUM! Magazine](#)

Using Grooves and the Groove pool in Ableton.

[Step by step instructions](#)

[Eric Harland: Playing behind/on/ahead of the beat](#)

III. Synthesis

Thursday, September 3rd – Topic 10 and 11

Acoustics and Intro to Subtractive Synthesis

Intro to Acoustics. Timbre and the harmonic series. Introduction to Subtractive Synthesis. Automating the filter.

[Introduction to Acoustics & Synthesis lecture](#)

Filters and automation

Oscillators, Envelopes and Modulation

Modulation with envelopes and LFO's. Pitch, filter cutoff and pulse-width modulation.
Creating a synthesized kick drum from scratch.

Tuesday, September 8th – Topic 12

Exploring synthesized sounds

Exploring iconic synthesizer patches.

Thursday, September 10th – Topic 13 and 14

Re-making a 2010's hit

Re-making Taylor Swift's "Don't blame me" synths. And how to sample anything from your laptop using Blackhole and multi-output.

Other types of synthesis

*Class Time/Project time

Resources

[An Overview Of Logic Pro X's Powerful Synths](#)

[VCV Rack](#) – learn modular synthesis with free software

[What is Wavetable synthesis?](#)

[Wavetable Synthesizer Manual](#)

[Wavetable Synthesizer](#)

Ableton tutorials on Wavetable: [overview](#), [modulation matrix](#), [unison](#), [oscillator effects](#)

[Creating a Wavetable synthesizer sound from scratch](#)

Granular Synthesis:

What are the basics of granular synthesis? 3 articles: [Sound on Sound](#), [Wikipedia](#), [Soundfly](#), [Granulator II](#)

[Virtual Audio Cable \(VAC\)](#)

IV. Sampling

Tuesday, September 15th – Topic 15 and 16

The cultural impact of breakbeats. Ethics of sampling.

Breakbeats and Sampling and their lasting impact on popular music.

Ethics of sampling. Genealogy of samples. Who Sampled.

[The cultural impact of breakbeats](#)

Chopping (aka slicing) samples

Basics of a Sampler Instrument. Modes: transposing, slicing, one-shot. Built-in filters. Slicing samples to create a drum beat.

Thursday, September 17th – Topic 17 and 18

Diggin' the crates

Warp modes, transposition. Aesthetics of sampling vocals and other instruments.

Making a beat with everyday sounds

Sampling everyday sounds

[Creating a percussive beat with everyday sounds](#)

Resources

[Alan Lomax, his field recordings](#)

Sources for samples:

[Vocal Downloads](#), [Sample Swap](#), [Cymatics](#), [Beat Academy](#)

[Two methods for slicing samples](#)

[More Simpler techniques](#)

Sampling: fair use, rights of use.

[Legal issues surrounding sampling in music](#)

[Drake's lawsuit](#)

[How Music Copyright Works: Sampling, Covers, Mixtapes & Fair Use](#)

[When You Need Permission to Sample Others' Music, from Nolo, a legal firm](#)

[A Tribe Called Quest say Lou Reed got all the money from 'Can I Kick It?'](#)

V. Effects (aka Signal Processing)

Tuesday, September 22nd – Topic 19 and 20

Equalizers

Parameters of EQ. Relationship with filter. Demo of class activity. Intro to EQ's.

[Introduction to Equalizers](#)

Delays

Parameters of delays. Slapback delay and other iconic delay usages. Experimental uses of delays.

[Introductions to Delays](#)

Thursday, September 24th – Topic 21

Reverbs

Intro to reverb parameters and uses of reverb.

[Introduction to Reverbs](#)

Tuesday, September 29th – Topic 22

Creative FX's. Dub & the mixer as an instrument

Creative combination of effects. Parallel and serial processing. Effect racks. Effect morphing. Multi-band effects.

Creating a Wet / Dry.

Thursday, October 1st – Topic 23

Listening party/ Class time

Resources

- compare [The Serial Loop and The Parallel loop](#), also [here](#).

[Creating a Wet / Dry with an Audio Rack effect](#). — [how to wet/dry anything in Ableton](#) – [saving this as a Template](#)

Using zones to morph between effects – [how to create a morphing multi FX](#)

Using Multi-band Effects Processing – Kadenze's course [Sound Production in Ableton Live for Musicians and Artists](#)

Meeting 8, number 8

VI. Introduction to Post-production and Mixing

Tuesday, October 6th – Group Work - Topic 24

Group work

Groups are created for collective songwriting and production through the rest of the semester.

Thursday, October 8th – Group Work – Topic 25

Group Work

Group work related to Assignment 7

Tuesday, October 13th – Topic 26

Stem management

Group work. Importing stems, best practices (aka: what to do with the FX!)

Thursday, October 15th – Topic 27

Introduction to Mixing

Mixing. Introduction to Audio Engineering & mixing. Listening tests. Listening and critique (A/B listening). Mix overview and Groundwork.

[Lecture: Mixing](#)

[Hearing test online](#), [Loudness](#), [Decibels](#), [loudness](#), [phones and tones](#)

Tuesday, October 20th – Topic 28

Mixing – balance, panorama & frequency

Thursday, October 22nd – Topic 29

Mixing – dimension

Resources

[Mixing: Frequency + "Fragile Thoughts" mix comparison. Worksheet.](#)

[Mixing: Frequency. Worksheet.](#) based on Owsinski, Bobby. ["The Mixing Engineer's Handbook"](#)

VI. (continued) Mixing

Tuesday, October 27th – Topic 30 and 31

Mixing – Compression

Listening to Compression. Extreme example: a long guitar note. Phat snare. Parameters and typical applications.

[Theory and parameters.](#)

Drawbacks: [the Loudness War](#)

Listening and feedback

Thursday, October 29th – Topic 32

Mixing – Bussing for sub mixes and focal points

The importance of sub-groups (aka buses) in mixing. Using volume and compression automation to create focus.

Tuesday, November 3rd – Topic 33

Introduction to Mastering

Introduction to [Mastering](#).

Why Master? Reference listening. Opening exports in Audacity.

Resources:

[When to use different Compressor Types?](#)

[Mastering 2-Bus Compression To Improve Your Mixes | Production Expert](#)

VII. Recording

Thursday, November 5th – Topic 34 and 35

Recording Hardware

Audio interfaces, Mics, types of signal and cables.

[Audio Interfaces](#), [Microphones and mic techniques](#)

Approaches & Techniques + Pre-production

Discussion: approaches to recording: live recording vs. multi-tracking (overdubbing).

Recording techniques for various sources and instruments, Recording vocals

Setting up recording in DAW, Recording session planning, I/O, Sends / Returns, Musicians mixes

Tuesday, November 10th– Topic 36

In-class work (Assignment 7a)

Thursday, November 12th – Topic 37

In-class work/Comping

Resources

[Comparison of different microphone positions for orchestra instruments](#)

[How To Record Drums For 5 Genres](#)

VIII. Final projects

Tuesday, November 17th – Topic 39

In-class final project prep

Thursday, November 19th – Topic 40 and 41

In-class final project prep

NO CLASS - THANKSGIVING WEEK November 23 - 27th!!!

Tuesday, December 1st – CONSULTATION

Mixes: discussion & feedback

Mandatory individual consultation

Tuesday, December 3rd – LAST DAY

Listening party! - FINAL PROJECTS DUE at 11:10am - uploaded/submitted

Bibliography:

Ballou, Glen. "Handbook for Sound Engineers" -> available through ILL only
Davis, Gary and Jones, Ralph. "Yamaha Sound Reinforcement Handbook"
Huber, David Miles. "Modern Recording Techniques" -> currently being requested by UC Merced library
Lewisohn, Mark and McCartney, Paul. "The Complete Beatles Recording Session"
Massey, Howard. "Behind the Glass: Top Record Producers Tell How They Craft the Hits"
Owsinski, Bobby. ["The Mixing Engineer's Handbook"](#)
Owsinski, Bobby. ["The Recording Engineer's Handbook"](#)
Roads, Curtis. "The Computer Music Tutorial" -> will be on reserve soon.
Schmidt Horning, Susan. "Chasing Sound: Technology, Culture, and the Art of Studio Recording from Edison to the LP"
Self, Douglas. "Audio Engineering Know It All"
Senior, Mike. "Mixing Secrets for the Small Studio"

Online resources:

[Bobby Owsinski's blog](#)

[Circles Sines and Signals - Introduction](#)

[\(Artificial\) Space Is the Place: A Reverb Technology Primer – Flypaper](#)

ACADEMIC INTEGRITY

Students caught cheating or plagiarizing will receive a "0" for that particular assignment or exam [or specify alternative sanction, such as course failure]. Additionally, the incident will be reported to the Dean of Students (Office of Academic Integrity), who may impose further penalty. According to the UNT catalog, the term "cheating" includes, but is not limited to: a. use of any unauthorized assistance in taking quizzes, tests, or examinations; b. dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or carrying out other assignments; c. the acquisition, without permission, of tests or other academic material belonging to a faculty or staff member of the university; d. dual submission of a paper or project, or resubmission of a paper or project to a different class without express permission from the instructor(s); or e. any other act designed to give a student an unfair advantage. The term "plagiarism" includes, but is not limited to: a. the knowing or negligent use by paraphrase or direct quotation of the published or unpublished work of another person without full and clear acknowledgment; and b. the knowing or negligent unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.

See: [Academic Integrity](#)

LINK: <https://policy.unt.edu/policy/06-003>

STUDENT BEHAVIOR

Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The university's expectations for student conduct apply to all instructional forums, including university and electronic classrooms, labs, discussion groups, field trips, etc.

See: [Student Code of Conduct](#)

Link: <https://deanofstudents.unt.edu/conduct>

ACCESS TO INFORMATION – EAGLE CONNECT

Your access point for business and academic services at UNT occurs at my.unt.edu. All official communication from the university will be delivered to your Eagle Connect account. For more information, please visit the website that explains Eagle Connect.

See: [Eagle Connect](#)

LINK: eagleconnect.unt.edu/

ODA STATEMENT

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with an accommodation letter. You can now request your Letters of Accommodation ONLINE and ODA will mail your Letters of Accommodation to your instructors. You may wish to begin a private discussion with your professors regarding your specific needs in a course. Note that students must obtain a new letter of accommodation for every semester. For additional information see the Office of Disability Access.

See: [ODA](#)

LINK: disability.unt.edu. (Phone: (940) 565-4323)

Health and Safety Information

Students can access information about health and safety at: <https://music.unt.edu/student-health-and-wellness>

Registration Information for Students

See: [Fall Academic Calendar Information](#)

Link: <https://registrar.unt.edu/registration/fall-academic-calendar.html>

Semester Calendar, Fall 2026

See: [Fall Semester Calendar](#)

Link: <https://registrar.unt.edu/registration/fall-academic-calendar.html>

Financial Aid and Satisfactory Academic Progress

Undergraduates

A student must maintain Satisfactory Academic Progress (SAP) to continue to receive financial aid. Students must maintain a minimum 2.0 cumulative GPA in addition to successfully completing a required number of credit hours based on total hours registered. Students cannot exceed attempted credit hours above 150% of their required degree plan. If a student does not maintain the required standards, the student may lose their financial aid eligibility.

Students holding music scholarships must maintain a minimum 2.5 overall cumulative GPA and 3.0 cumulative GPA in music courses.

If at any point you consider dropping this or any other course, please be advised that the decision to do so may have the potential to affect your current and future financial aid eligibility. It is recommended that you to schedule a meeting with an academic advisor in your college or visit the Student Financial Aid and Scholarships office to discuss dropping a course before doing so.

See: [Financial Aid](#)

LINK: <http://financialaid.unt.edu/sap>

Graduates

A student must maintain Satisfactory Academic Progress (SAP) to continue to receive financial aid. Students must maintain a minimum 3.0 cumulative GPA in addition to successfully completing a required number of credit hours based on total registered hours per term. Music scholarships require a 3.5 cumulative GPA. Students cannot exceed maximum timeframes established based on the published length of the graduate program. If a student does not maintain the required standards, the student may lose their financial aid eligibility.

If at any point you consider dropping this or any other course, please be advised that the decision to do so may have the potential to affect your current and future financial aid eligibility. It is recommended you schedule a meeting with an academic advisor in your college, an advisor in UNT-International or visit the Student Financial Aid and Scholarships office to discuss dropping a course.

See: [Financial Aid](#)

LINK: <http://financialaid.unt.edu/sap>

COUNSELING AND TESTING

UNT's Center for Counseling and Testing has an available counselor for students in need. Please visit the Center's website for further information:

See: [Counseling and Testing](#)

Link: <http://studentaffairs.unt.edu/counseling-and-testing-services>.

For more information on mental health resources, please visit:

See: [Mental Health Resources](#)

Link: <https://disparities.unt.edu/mental-health-resources>

ADD/DROP POLICY

Please be reminded that dropping classes or failing to complete and pass registered hours may make you ineligible for financial aid. In addition, if you drop below half-time enrollment you may be required to begin paying back your student loans. See Academic Calendar (listed above) for additional add/drop Information.

Drop Information: <https://registrar.unt.edu/registration/fall-academic-calendar.html>

STUDENT RESOURCES

The University of North Texas has many resources available to students. For a complete list, go to:

See: [Student Resources](#)

Link: <https://success.unt.edu/aa-sa-resources>

CARE TEAM

The Care Team is a collaborative interdisciplinary committee of university officials that meets regularly to provide a response to student, staff, and faculty whose behavior could be harmful to themselves or others.

See: [Care Team](#)

Link: <https://studentaffairs.unt.edu/care-team>

Additional Resources for Faculty

USE OF ARTIFICIAL INTELLIGENCE (including sample statement for syllabi)

See: [Faculty Guide for the Use of AI](#)

Link: <https://guides.library.unt.edu/artificial-intelligence/AIfaculty>

RETENTION OF STUDENT RECORDS

Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year after course completion. Course work completed via the Canvas online system, including grading information and comments, is also stored in a safe electronic environment for one year. You have a right to view your individual record; however, information about your records will not be divulged to other individuals without the proper written consent. You are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the university's policy in accordance with those mandates.

See: [FERPA](#)

Link: <http://ferpa.unt.edu/>