Music Tech Courses at U of U

MUSC 1340, Intro to music tech

Target: MUSC 1340 is appropriate for music professionals who do not intend to specialize in technology but need to know the basics of audio and music tech to be applied in their specialty.

Prerequisite: None (contrary to the information on the U's web site)

Assumed proficiency: There are no pre-requisites for 1340 and no assumed proficiency in music related software. As a computer course, it does assume familiarity with basic computer skills: using a mouse, switching applications, browsing, locating, opening, and saving files.

Topics: (CMS/ATMI suggested competencies for music students)
Set up and trouble shoot a mic/interface/mixer/computer
Record audio from web sources and personal devices
Understand media types: AIF, MIDI, AAC, MP3, PDF, XML, JPG, PNG
Use transcription software
Enter and edit music using notation software
Demonstrate an understanding of copyright and fair use
Record and edit video, sync audio with video
Add sound fx and a ducked commentary to video
Create a CD/DVD or streaming audio package of recordings
Edit digital audio
Music specific writing techniques in MS Word, e-publication
Create a music presentation with presentation software
Create a podcast of the computer screen
Manage a computer work station
Understand the basics of synthesis and MIDI instruments
Introduction to multi-track recording and mixing

MUSC FA 3300, Intro to music tech

Target: FA 3300 is appropriate for non-musicians (such as film students) who do not intend to specialize in music technology but need to know the basics of audio and music tech to be applied in their specialty.

Prerequisite: None (contrary to the information on the U's web site)

Assumed proficiency: OS X operating system as well as basic computer skills: locating, moving, copying, and saving files to and from servers, local drives and portable media, some experience with recording and editing software, for example, recording and mixing in Garage Band, basic skills in electronic music (cables, amps, speakers, etc.). While the material is similar to FA 3250, the pace is slower and no music training is required.

Topics: The nature and properties of sound and sound waves
Music languages: Frequency, Cents, MIDI, XML, Binary and Hex
File types: AIF, Wave, MP3, AAC, sample rate and bit depth

Microphone types, cables, connectors, balanced lines
Mic placement, proximity, phase, axis, stereo mic techniques
Recording techniques; overdubs, noise, distortion, setting levels, aliasing
Editing techniques; markers, zero crossings, cross-fades
EQ, noise management, panning, compression, reverbs and delays
Spatialization, automation, ring modulation, side-chains
Application of all these using Amadeus Pro and Logic Pro

3250, Music Tech I

Target: MUSC 3250 is for music professionals who intend to specialize in composition, recording, jazz or guitar performance, or music technology.

Prerequisite: Passing grade in 1340, or acceptance as a music composition, guitar performance or jazz composition major, or instructor's consent.

Assumed proficiency: OS X operating system as well as basic computer skills: locating, moving, copying, and saving files to and from servers, local drives and portable media, some experience with recording and editing software, for example, recording and mixing in Garage Band, basic skills in electronic music (cables, amps, speakers, etc.).

Topics:

The nature and properties of sound and sound waves
Music languages: Frequency, Cents, MIDI, XML, Binary and Hex
File types: AIF, Wave, MP3, AAC, sample rate and bit depth
Microphone types, cables, connectors, balanced lines
Mic placement, proximity, phase, axis, stereo mic techniques
Recording techniques; overdubs, noise, distortion, setting levels, aliasing
Editing techniques; markers, zero crossings, cross-fades
The nature of music: meter, harmony, ratios and intervals, tuning systems
Mix styles, elements, and dimensions
EQ, noise management, panning, compression, reverbs and delays
Synced, asynchronous, slap, and doubling delays, chorus, serial routing
Auxiliaries for groups, busses, sub-masters, parallel effects and monitors
Synthesis overview: filtering, modulation, sampling, physical models
Spatialization, automation, ring modulation, side-chains
Application of all these using Amadeus Pro and Logic Pro
Proficiency in a multi-track session in Logic Pro with sub-masters and auxiliary routing for parallel and serial fx and monitoring sends.

3252, Music Tech II

Target: 3252 is for composition students (to learn computer assisted and electro-acoustic techniques) or computer scientists with some musical background who want to apply their computer skills to music topics.

Prerequisite: passing grade in 3250 or instructor's consent.

Assumed Proficiency: 3250 topics, especially Logic Pro

Topics Covered:

Programming basics
SuperCollider (a small-talk based computer synthesis language)
Concrète composition using SC and Logic Pro
Pitch and time shift, looping, abrupt edits, loops
Ultrabeat, EXS24 as concrète tools
Internal audio routing with Soundflower
Wave forms and wave generators
VCO, VCA, VCF, Envelopes, voltage control, scale and offset
Control sources, periodic waves, triggers and envelopes, arrays
SynDefs and GUIs
Synthesis: filtering, modulation, physical models, additive methods
Inharmonic and harmonic spectra, noise (white, pink)
Random number generators, seeds, clock seeds, and bias
Internal MIDI routing
Aesthetics of computer assisted and algorithmic composition
Working with files and data
Mapping, markovs, and masks

EAE 4900, Computer Music

Target: EAE 4900 is a special topics computer science course for CS majors but also music students who want to learn to code in SuperCollider.

Prerequisite: passing grade in CS 1400 or instructor's consent.

Assumed Proficiency: OS X operating system as well as basic computer skills: locating, moving, copying, and saving files to and from servers, local drives and portable media; the basics of programming including experience writing code in Java, Perl, C, C++, Python, etc.

Topics Covered:

Programming basics
SuperCollider (a small-talk based computer synthesis language)
Concrète composition using SC and Logic Pro
Pitch and time shift, looping, abrupt edits, loops
Introduction to Logic Pro and Amadeus Pro
Internal audio routing with Soundflower
Wave forms and wave generators
VCO, VCA, VCF, Envelopes, voltage control, scale and offset
Control sources, periodic waves, triggers and envelopes, arrays
SynDefs and GUIs
Synthesis: filtering, modulation, physical models, additive methods
Inharmonic and harmonic spectra, noise (white, pink)
Random number generators, seeds, clock seeds, and bias
Aesthetics of computer assisted and algorithmic composition
Working with files and data
Mapping, markovs, and masks