Example syllabus for an undergraduate history of music technology course with major research project (for mid to upper-level students with prior music coursework or equivalent experience)

40,000 YEARS OF MUSIC TECHNOLOGY

Course Description: Over 40,000 years ago humans fashioned flutes from bone; since then music-making has continued to motivate and to be shaped by technological innovations. This course explores the relationship between music and technology from the Paleolithic Age to the present day. We will examine the origins and impact of diverse musical instruments, with attention to connections between musical and technological developments, the reasons instruments are accepted, modified or abandoned, and debates about the effects of new technologies on music. We will consider such processes as standardization, commodification, transculturation and experimentation; and we will consider the "better for what and for whom?" questions of tools across musical, societal and ethical dimensions. By studying the socio-cultural history of such instruments as the violin, piano, electric guitar and synthesizer, we will gain an understanding of the interplay between technological change and the enduring human need for music.

Learning Goals: By participating in this course, you'll develop abilities to:

1. Identify affordances and constraints, both musical and social, of diverse music technologies
2. Explain factors, including social institutions and cultural values, that promote or resist music-technological change
3. Comparatively analyze the roles of social institutions, economic systems and aesthetic values in the creation and reception of music technologies in different historical periods and parts of the world
4. Identify aesthetic, economic, and social trade-offs involved in transitions from one music technology to another
5. Evaluate claims around new music technologies by comparing them to historical precedents
6. Evaluate music technologies, both old and new, from ethical perspectives
7. Carry out original research in the field of music technology
8. Write coherently and persuasively about music and technology in both public-facing and academic styles

Course Materials:

 Deirdre Loughridge, *Bone Flute to Auto-Tune: Forty Thousand Years of Music Technology* (University of Chicago Press, 2026). $30 paperback or $21 ebook through Chicago Discount Digital Coursebooks

 A Spotify or YouTube Music Premium account to access the BFAT listenings on demand without commercial interruptions. While accessing without a premium account is possible, I strongly recommend a premium account for the duration of this course for the best listening and learning experience. Premium subscriptions also deliver more revenue to artists than does ad-supported listening. $7.99/month student rate for YouTube or $6.99/month student rate for Spotify

Coursework:

10% Class preparation and in-class activities/discussions
15% Museum exhibit (5% meeting, 10% written assignment)
40% 4 Quizzes
15% Final Project development (5% proposal, 5% draft, 5% peer review)
20% Final Project

Class Session Topic	Reading/Listening	Milestones
UNIT 1 (weeks 1-4)		
Our Lives with Music Technology		
Introductions	Introduction	
The First Musical Instruments?	Chapter 1	
Discussion: What is (your relationship with) music technology?	· Part 1 Perspective · Reich, "My (Ambiguous) Life with Technology" · Pamela Z, "A Tool is a Tool"	
Music Writing	· Chapter 2 · Eno, "The Studio as a Compositional Tool"	
How Do(n't) Music Technologies Change		
From Found Objects to Valved Brass	Chapter 4	
Viols and Violins	Chapter 5	
Discussion: Do Music Technologies Evolve? & Intro to Museums of Musical Instruments	· Part 2 Perspective · Gates, "Met Gives Music Gallery a Makeover," *NYT* · Exhibit examples	Start museum exhibit assignment
Orchestras	Chapter 6	
Saxophone	Chapter 7	Unit 1 Quiz
UNIT 2 (weeks 5-8)		
Values in Musical Instrument Design		
Voice as Instrument	Chapter 8	Museum exhibit meetings
Organ, "King of Instruments"	Chapter 9	
Discussion: Instrument Ideals	· Dolan, "Toward a Musicology of Interfaces" · Rovan, "Living on the Edge"	
More Keyboard Instruments	Chapter 10	
Instruments of Ethereal Tone	Chapter 11	Museum exhibit due
Transculturation		
Cymbals	Chapter 12	
Banjo	Chapter 13	
History, Theory, Design: Intro to Final Project		Start Final Project
Harmonium	Chapter 14	Unit 2 Quiz
UNIT 3 (weeks 9-12)		
Rationalization & Standardization		
Sound & Number	Chapter 3	
Tuning Trouble	Chapter 15	
Discussion: Transcultural Machine Learning	Hantrakul, "AI Song Contest 2022 Process Document"	
Metronomes	Chapter 16	
A 440, CD, MP3, MIDI	Chapter 17	Final project proposal due

Gender in the Mix		
Accordions	Chapter 18	
Electric Guitar	Chapter 19	
Electronics Explorers	Chapter 20	
Mainstreaming Electronic Sounds	Chapter 21	Unit 3 Quiz
Project workshop		Final project draft & peer review
UNIT 4 (weeks 13-16)		
Becoming a Musical Instrument		
Player Piano & Phonograph	Part 7 Perspective Chapter 22	
Tape, Multitracking & Looping	Chapter 24	
Discussion: Play it again, or different this time?	· Thomas Porcello, "The Ethics of Digital Audio-Sampling: Engineers' Discourse," *Popular Music* (1991) · Herington et al, "Musician's Ethical Concerns about AI: an Interview Study," *AI & Society* (2026)	
Turntables and Samplers	Chapter 25	
Drum Machines	Chapter 26	
Hopes & Fears		
The Promise of Computers	Part 8 Perspective Chapter 27	
Algorithms and the Internet	Chapter 29	
Discussion: What's Next?	· Chapter 30 · Lewis, "Why Do We Want Our Computers to Improvise?"	
Final Project Presentations		Unit 4 Quiz
Final Project Presentations		
		Final Project Due

<u>Readings</u>

Steve Reich, "An Introduction, or My (Ambiguous) Life with Technology," *Sound Unbound: Sampling Digital Music and Culture*, ed. Paul D. Miller (MIT Press, 2008), 1-4.

Pamela Z, "A Tool is a Tool," in *Women, Art, and Technology*, ed. Judy Malloy (MIT Press, 2003), https://archive.pamelaz.com/tool.htm

Brian Eno, "The Studio as Compositional Tool," *Audio Culture: Readings in Modern Music*, ed. Christoph Cox and Daniel Warner (Continuum International), 127-30.

Anita Gates, "Met Gives Music Gallery a Makeover," *New York Times* (March 12, 2019): https://www.nytimes.com/2019/03/12/arts/metropolitan-museum-reopens-music-gallery.html

Emily Dolan, "Toward a Musicology of Interfaces," *Keyboard Perspectives* V (2013): 1-12.

Joseph Rovan, "Living on the Edge: Alternate Controllers and the Obstinate Interface," in *Mapping Landscapes for Performance as Research: Scholarly Acts and Creative Cartographies* (Basingstoke: Palgrave Macmillan, 2009), 252-259.

Lamtharn Hantrakul, "Enter Demons and Gods: AI Song Contest 2022 Process Document," https://lamtharnhantrakul.github.io/enter-demons-and-gods/

Thomas Porcello, "The Ethics of Digital Audio-Sampling: Engineers' Discourse," *Popular Music* 10 (1991): 69-84.

Jonathan Herington, Raffaella Borasi, Benjamin J. Guerrero et al, "Musician's Ethical Concerns about AI: an Interview Study," *AI & Society* 41 (2026): 1075-1088. https://link.springer.com/article/10.1007/s00146-025-02601-6

George Lewis, "Why Do We Want Our Computers to Improvise?" in *Oxford Handbook of Algorithmic Music*, ed. Alex McLean and Roger T. Dan (New York: Oxford University Press, 2018).