

Music 80C
History, Literature, and Technology of Electronic Music
Monday/Wednesday 1:00 - 4:30
Music Center 131

Instructor: Jon Myers
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Office Hours: Tuesdays 1:00 - 3:00 (DARC 340)

Course Description

This course is a general survey of the history of electronic music from the late 19th century to the late 20th century. Students in this course will study the works and aesthetics of forward-thinking composers and musicians, and the often interrelated technological developments of the era—early electronic instruments, recording and playback technologies, tape machines, analog synthesizers, computer music, etc. They will also gain a basic foundation for understanding these innovations and artworks through hands-on exposure to the fields of acoustics, electronics, the perception of auditory phenomena, and avant garde and experimental western musical traditions. Note that the material covered in this course is in no way comprehensive; instead, the instructor strives to touch upon a number of relevant streams and encourages students to investigate further at their leisure.

Class Requirements:

1) Listening Journal

.mp3s of the listening materials can be found on ‘canvas’.

Keep a journal of the out of class assigned listening examples. The journal should include your responses to each composition or listening experience. These can take the form of emotional reactions, intellectual ruminations, intelligent critical commentary, attempts to analyze the technology used, placing the work in historical/social context, or any other relevant description. However, these comments should transcend mere likes and dislikes in that such reactions are generally a superficial form of consideration, often constraining our ability to engage and understand the unfamiliar. Each entry should be around 100 words, roughly the size of the paragraph you just read. (Typed double-spaced, no larger than a common 12 pt. font). Submit via canvas before each class.

2) Assigned Reading/Writing:

Readings can be found on ‘canvas’.

Each class there will also be assigned reading. Sometimes this may primarily focus upon a single large piece of writing but more commonly there will be a collection of short writings by different

authors. In either case, prepare a 2 to 3 page summary of the class's readings that reflects your understanding of the material. These are due on canvas before each class meeting. There will be 8 total summaries due, as the last inter-class session will be devoted to preparations for class presentations. (Typed double-spaced, no larger than a common 12 pt. font).

3) Attendance and participation in activities / performances / class discussions

4) Final Presentation

Each student will give a ~10-15 minute presentation on the final meeting of the course. A full description of this assignment will be given at a later date.

Grading

Listening Journal: 25%

Reading Summaries: 25%

Attendance / Participation: 25%

Final Presentation: 25%

Academic Honesty

In this course, plagiarism will not be tolerated. If any part of an assignment is plagiarized, it will result in an automatic zero for that assignment, and may result in an academic misconduct report. If you would like to use someone else's words, encapsulate them within quotation marks and make appropriate citations.

Statement from the Disability Resource Center

UC Santa Cruz is committed to creating an academic environment that supports its diverse student body. If you are a student with a disability who requires accommodations to achieve equal access in this course, please submit your Academic Access Letter from the Disability Resource Center (DRC) to me privately during my office hours or by appointment, preferably within the first week of the Summer quarter. At this time, I would also like us to discuss ways we can ensure your full participation in the course. I encourage all students who may benefit from learning more about DRC services to contact DRC by phone at 831-459-2089 or by email at drc@ucsc.edu.

*****Class Schedule and Syllabus are Subject to Change*****

Schedule

July 30, Monday - Class Introduction

Discussion: What is 'Electronic Music'?

Modes of listening

Seven reasons why electronic music is different

Ashley - "Title Withdrawn" (1976)

Musical / acoustic terms

Demo: Steve Reich - *Pendulum Music* (1968)

Reading:

Luigi Russolo - "The Art of Noises"

John Cage - "The Future of Music: Credo"

Edgard Varèse and Chou Wenchung - "The Liberation of Sound"

David Dunn - "A History of Electronic Music Pioneers" 1 - 10

Listening:

Pyotr Tchaikovsky, *Valse Sentimentale* (1877) [performed by Clara Rockmore, Theremin]

Luigi Russolo, *Risveglio di una Citta* (1921)

John Cage, *Imaginary Landscape No. 1* (1939)

Johanna Beyer, *Music of the Spheres* (1938)

Edgard Varèse, *Ecuatorial* (1934)

Percy Grainger - *Free Music No. 1* (1936) and *Free Music No. 2* (1937)

August 1, Wednesday - Electronic Music Concepts, Early Histories

Precedents - Turn of the century Avant Garde - Satie, Schoenberg, and etc.

Useful musical, acoustic, and electrical terms: a glossary

Early electronic instruments: Grey, Theremin, Cahill, Ondes Martenot

Demo: Theramin(s)

Early Electronic Music - John Cage, Johanna Beyer, Edgard Varèse, Luigi Russolo.

Introduction to Alvin Lucier's *Chambers* (1968)

Reading:

Alvin Lucier and Douglas Simon - "Chambers"

Pierre Schaffer - "Acousmatics"

Margaret Schedel - "Electronic Music and the Studio"

David Dunn - "A History of Electronic Music Pioneers" 10 - 19

Karlheinz Stockhausen - "Electronic and Instrumental Music"

Glen Gould - "The Prospects of Recording"

Listening:

Pierre Schaeffer - *Etude aux Chemins du Fer* (1948)
Edgard Varèse - *Déserts* (1954) and *Poeme Electronique* (1958)
Karlheinz Stockhausen - *Gesang der Jüngelinge* (1956)
Gyorgi Ligeti - *Glissandi* (1957) and *Artikulation* (1958)
Iannis Xenakis - *Bohor* (1962)
Hildegard Westercamp - *Kits Beach Soundwalk* (1989)

Assignment:

Gather materials for *Chambers* performance.

August 6, Monday - Chambers Performance; European Tape Music; John Cage
[CLASS WILL MEET IN RECITAL HALL, ROOM 101]

Class Performance: Alvin Lucier - *Chambers* (1968)
Musique Concrète and Acousmatic Sound
Group de Recherches Musicales (GRM) - Pierre Henry, Pierre Schaeffer
Westdeutscher Rundfunk (WDR) - Karlheinz Stockhausen
Bebe and Louis Barron ; Raymond Scott.
John Cage - *Williams Mix*

Reading:

William S. Burroughs - "Invisible Generation"
Pauline Oliveros - "On Sonic Meditation" and "Tape Delay Techniques"
Steve Reich - "Music as Gradual Process"
Benjamin Ethan Tinker - "Reflections & Dwelling; Echo & Reverberation in Pauline Oliveros' Work"
Brian Eno - "The Studio as Compositional Tool"
Jacques Barzun - "Introductory Remarks to a Program of Works Produced at the Columbia-Princeton Electronic Music Center"

Listening:

John Cage - *Williams Mix* (1953)
Bebe and Louis Barron - *Forbidden Planet* (1956)
Steve Reich - *Come Out* (1965)
Pauline Oliveros - *Bye Bye Butterfly* (1965) and *Mnemonics II* (1965)
Brian Eno - *Music for Airports* (1978)
Milton Babbitt - *Composition for Synthesizer* (1964)

August 8, Wednesday - American Tape Music
[CLASS WILL MEET IN RECITAL HALL, ROOM 101]

The San Francisco Tape Music Center - Pauline Oliveros, Ramon Sender, Morton Subotnick
The Columbia-Princeton Studio - Babbitt, Leuning, Ussachevsky, Wourinen, etc.
Class listening experiences - Oliveros' Sonic Meditation(s); Young's - *Drift Study* (1969)
Guest talk / demo by Scott Makson - Tape machines, tape delay, loops, cutting 'n splicing, etc.

Readings:

Amy Beal - selections from liner notes to "Music for Merce"
James Pritchett - "David Tudor as Composer/Performer in Cage's *Variations II*"
Douglas Kahn - "Alvin Lucier - Brainwaves"
Gordon Mumma - "Two Decades of Live-Electronic Music, 1950-70" and "Witchcraft, Cybersonics, and Folkloric Virtuosity"
Nicolas Collins - "Live Electronic Music"
Alvin Lucier and Douglas Simon - "Music on a Long Thin Wire"

Listening:

John Cage - *Variations II* (1961) [realized by David Tudor]
Pauline Oliveros - *In Memoriam: Nikola Tesla, Cosmic Engineer* (1969)
David Tudor - *AnimaPepsi* (1970) and *Weatherings* (1978)
Gordon Mumma - *Hornpipe* (1967)
David Behrman - *Wavetrain* (1966) and *Runthrough* (1968)
Robert Ashley - *String Quartet Describing the Motions of Large Resonant Bodies* (1972)

August 13 - Live Electronic Music

John Cage and David Tudor

The Sonic Arts Union - Alvin Lucier, David Behrman, Robert Ashley, Gordon Mumma

Experiments in Art and Technology (E.A.T.): Nine Evenings and Pepsi Pavilion.

DEMO - Alvin Lucier - *Music on a Long Thin Wire*

Excerpts from *Music with Roots in the Aether*:

Gordon Mumma - *Some Voltage Drop* (filmed in the UCSC Quarry!)

Alvin Lucier - *Music for Solo Performer* and *Bird and Person Dining*

Readings:

Thom Holmes - "Wendy Carlos and the Exploration of Musical Consonance"

Trevor Pinch and Frank Trocco - "The Social Construction of the Early Electronic Music Synthesizer"

Eliane Radigue interview with Tara Rodgers

Listenings:

Wendy Carlos - *Switched On Bach* (1968)

Morton Subotnick - *Silver Apples to the Moon* (1967)

Pauline Oliveros - *Alien Bog* (1967)

Susanne Ciani - *Buchla Concerts* (1975)

Maggi Payne - *Spirals* (1977)

Eliane Radigue, *Trilogie de la Mort* (1984-1996)

August 15 - Modular Synths

Basics of Synthesis - Voltage Control, Oscillators (sine, triangle, square), noise (pink, white), modulation, filtering, etc.

Moog and Buchla

Guest talk / demo by Scott Makson - The EMU Modular Analog Synthesizer.

Reading:

James Tenney - "Computer Music Experiences"

Karlheinz Essl - "Algorhythmic Composition"

Charles Ames - "Automated Composition in Retrospect"

Listening:

James Tenney - *For Ann (Rising)* and *Phases*

Lejaren Hiller and Leonard Isaacson, *Illiac Suite*

Charles Dodge - *Earth's Magnetic Field*

Iannis Xenakis - *ST / 10*

Herbert Brün - *Sonoriferous Loops*

John Cage - *HPSCHD*

August 20 - Early Computer Assisted Composition

Lejaren Hiller and Leonard Isaacson, *Illiac Suite*

James Tenney at Bell Labs

Cage and Hiller - *HPSCHD*

Reading:

Sergi Jordà - "Interactivity and Live Computer Music"

George E. Lewis - "Too Many Notes: Computers, Complexity, and Culture in *Voyager*"

Nate Wooley - interview with John Bischoff and Tim Perkis from *Sound American II*

Listening:

John Chowning - *Turenas* (1972)

Laurie Spiegel - *Drums* (1975) + *East River Dawn* (1980)

Carla Scalletti - *SunSurgeAutomata* (1986)

The League of Automated Music Composers - selections (1978 - 1983)

David Behrman - *On The Other Ocean* (1977)

Larry Polansky - *B'rey'sheet (In The Beginning...)* (1986)

George Lewis - *Voyager* (1993)

August 22 - Computer Music Synthesis, Interactivity

Computer synthesis paradigms, strategies, innovations.

Interactivity

Guest talk / demo by Madison Heying - Composer Carla Scalletti and the KYMA Sound Design Environment.

Joint demo / performance of interactive computer music: David Kant w/ MUSIC 80L (Artificial Intelligence and Music).

Reading:

Maryanne Amacher - "Psychoacoustic Phenomena in Music Composition"

Cathy van Eck - "Microphones and Loudspeakers as Musical Instruments"

Madison Heying and David Kant - " 'The Emergent Magician': Metaphors of Mind in the work of David Dunn"

Listening:

Maryanne Amacher - selections from *Sound Characters (Making the Third Ear)* (1995)

**Note, the Amacher should only be listened to through stereo loudspeakers at a high volume; psychoacoustic effects will be lost otherwise. We will listen in class if you can't find a loud stereo setup. . .*

David Dunn - *Mimus Polyglottos* (1976) and *Autonomous Systems: Red Rocks* (2007)

Toshi Nakamura - *No Input Mixing Board* (2000)

August 27 - Odds and Ends

Maryanne Amacher - sound environments and distortion product otoacoustic emissions.

Toshimaru Nakamura - no input mixing and the Japanese electronic free improvisation scene.

Laetitia Sonami - instrument design: Lady's Glove, Spring Syre

David Dunn - Acoustic Ecology

Cathy van Eck - Sound Art - Microphones and Loudspeakers as Musical Instruments

other possible odds and ends . . . TBD!

Assignment:

Prepare for final presentation.

August 29

Student Final Presentations