MUCP 4680/5680
History and Technology of Electroacoustic Music
Fall 2010

Time and place: MWF 1:00 – 1:50, MU 2009 (possibly alternating with MU 239)
Instructor: Dr. Andrew May
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E-mail: andrew.may@unt.edu
Office hours: regular hours tba, or e-mail to make appointment; MU 1003
Final exam: Wednesday, December 15, 10:30 a.m. - 12:30 p.m.
Prerequisite: MUCP 4670 or consent of instructor

Course Overview

Description

This course will develop an historical, technical, and aesthetic context for the art of electroacoustic music. Students will work with actual technologies of different periods (or approximations thereof) as they study the music and ideas of composers who used these technologies. Readings, listenings, and class discussions will be balanced with practical "mini-projects" and a final creative project. Midterm and final (cumulative) examinations will be given.

Objectives

Students completing this course will be able to:

• apply experience with traditional electroacoustic tools to their modern counterparts
• identify key features and tendencies of the electroacoustic repertoire
• describe the history and development of electroacoustic music globally
• understand current trends in musical technologies and aesthetics in their historical context

Materials

• CD-R or -RW media, or plentiful server space for upload, will help you back up your work (particularly audio files). Portable flash drives will also be useful.
• You will be given access cards for CEMI studios 2009 and 2013. You are encouraged to use them, as they have many advantages over home systems; for some projects you will be required to use them.
• No software purchases are required for this course, though pure data, csound, cecilia, spear, and other programs (mostly freeware) may be used during the class and are worth downloading and getting running on your own machines.

Textbooks

• Many readings will come from Joel Chadabe, Electric sound: the past and promise of electronic music. Copies are available at the bookstore, and one will be placed on reserve. You are not required to purchase it, but it is recommended.
• Another book that will see plenty of use is Christopher Cox and Daniel Warner (ed's), *Audio culture: readings in modern music.*

• Curtis Roads, *The Computer Music Tutorial* will be on reserve and used a fair amount.

• Miller Puckette, *Theory and techniques of electronic music* will be on reserve, but it’s also available on line at [http://www-crca.ucsd.edu/~msp/techniques.htm](http://www-crca.ucsd.edu/~msp/techniques.htm) for free.

• Other readings will be made available in the Music Library reserves or on-line.

**Readings and Listenings**

Weekly readings and listenings (and some video viewings) will be assigned (and others will be recommended). The materials will be available from library reserves and/or on-line materials. Your instructor will make mp3 recordings of most of the required listenings available on-line for your reference and study, but you should make a point of listening at full fidelity, with minimal distractions, in the library.

You will send weekly e-mails to your instructor documenting what significant features you hear in the listenings, how they might have been produced, and how you find they relate to the readings. This is an opportunity to hone the valuable skills of analytical listening and description - not a forum for your personal taste and opinions about musical aesthetics.

An extensive list of recordings and books will be reserved in the library for this course; beyond your assigned reading and listening, and others that will be recommended, you should browse the reserves to learn more about topics of particular interest to you.

**Projects**

Regularly assigned projects will involve practical tasks exploring particular technologies. Many of these projects will be assigned as team efforts – keep an eye out for your ideal collaborators within the class. These will be opportunities to learn, hands-on, things you just can’t learn from books. They may also produce interesting artwork.

Graduate students will write two essays in addition to the projects: the first will focus on aesthetic and technical issues of analog studio composition, and the second will focus on issues of digital production and/or performance.

The final project (due Wednesday, December 8) will be a work of music that you complete in a modern computer music environment, and will integrate aspects of what you have learned through work with other technologies.

**Examinations**

Midterm and final exams will be cumulative and will cover the materials studied in class in a "scattershot" manner.
**Course Policies**

**Grading**

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<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Reading/listening e-mails</td>
<td>20%</td>
</tr>
<tr>
<td>Projects</td>
<td>30% UG, 20% grad</td>
</tr>
<tr>
<td>Essays</td>
<td>0% UG, 10% grad</td>
</tr>
<tr>
<td>Midterm exam</td>
<td>10%</td>
</tr>
<tr>
<td>Final exam</td>
<td>20%</td>
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<tr>
<td>Attendance and participation</td>
<td>10%</td>
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**Attendance policy**

You have liberty of movement, but there are consequences to your choices. This course will move fast; you will become very confused if you do not attend regularly. Attendance will also be part of your grade, as noted above. In case of 6 or more unexcused absences, the instructor reserves the right to summarily assign you a failing grade for the course.

**Academic dishonesty policy**

see also http://www.unt.edu/policy/UNT_Policy/volume3/18_1_11.html

1) Cheating. 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, notes 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).
(e) any other act designed to give a student an unfair advantage.

2) Plagiarism. 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 acknowledgement and
(b) the knowing or negligent unacknowledged use of materials prepared by another person or by an agency engaged in the selling of term papers or other academic materials.

**Disability policy**

see also http://www.unt.edu/policy/UNT_Policy/volume2/6_8_3.html

Individuals qualifying under the Americans with Disabilities Act (ADA) who need special assistance to participate in a program, service or activity sponsored by the University Union are asked to contact the Verde Scheduling Office, a minimum of three business days in advance of when they will need the requested assistance to allow time for the request to be handled in an appropriate manner. The Verde Scheduling Office is located on the level 2 of the University Union. Telephone: (940) 565-3804, 565-3806 or TDD access through Relay Texas 1-800-735-2989.
Student Behavior in the Classroom

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 Center for Student Rights and Responsibilities 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 classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at www.unt.edu/csrr.

Course Outline

<table>
<thead>
<tr>
<th>Week</th>
<th>Date</th>
<th>Topics and Assignments</th>
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<tbody>
<tr>
<td>1</td>
<td>8/30</td>
<td>introduction, what machines want from us, early instruments</td>
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| 2    | 9/6   | (no class Monday) early EA music: concrète, elektronische, aesthetics  
Project 1 – instrument design – due September 8 |
| 3    | 9/13  | early analog techniques: tone generators, tape, reverb, filters |
| 4    | 9/20  | analog synthesis techniques and voltage control  
Project 2 - tape music composition – due September 22 |
| 5    | 9/27  | computer music techniques: from Music N to csound  
Graduate students: Paper 1 (analog) due September 29 |
| 6    | 10/4  | digital hardware techniques: FM synthesis, sampling, etc.  
Project 3 – soft analog performance synth – due October 6 |
| 7    | 10/11 | commercial hardware, popular music, new music and new wave  
Midterm examination October 13 |
| 8    | 10/18 | buffers, tables, samples, and the liberation of numbers  
Project 4 – delay processing – due October 20 |
| 9    | 10/25 | what's in a window? from harmonizers to granulation to formants to FFT  
Final project proposals due October 27 |
| 10   | 11/1  | in the frequency domain: FFT principles, decomposition, resynthesis  
Project 5 – digital instrument design – due November 3 |
| 11   | 11/8  | frequency domain: bin-shifting, convolution, phase vocoding |
| 12   | 11/15 | live, real-time, and interactive – and max from birth to 17  
Graduate students: Paper 2 (digital) due November 17 |
| 13   | 11/22 | (no class Friday): guest lectures TBA |
| 14   | 11/29 | music data: not just for music anymore (video, controllers, robotics, etc.) |
| 15   | 12/6  | project progress notes, review (12/10 is reading day) |
| 16   |       | Final examination (cumulative): Wednesday, December 15, 10:30 am – 12:30 pm |

***** dates and topics are subject to change as needed! *****