

*Piedmont Project Introduction*

As a composer, performer, and teacher of traditional and electro-acoustic music for over three decades, my life has been constantly filled with musical sound – humanly organized patterns of auditory stimulus in time. Attempting to identify the function, meaning, symbolism, and value of these sounds has been the focus of much of my research. What originally compelled me to participate in the Piedmont Project was the desire to examine how all of the sounds that surround us, not only those that we label as music, effect our cognition, health, social structures, and relationship to the environment. The workshop activities of the Piedmont Project were ideal for helping me expand my thinking about not only sound, but the broad ranging impact of all human activity. The workshop successfully illuminated the primary issues surrounding sustainability and environmental impact, thus providing a much-needed foundation of general principles and methodologies in which to approach my proposed study of acoustic ecology. The course that I will revise for this study is MUS 347 Electronic Music. One of the principal goals of this course has been for students to develop an increased sensitivity to listening and to develop an understanding of the cultural and cognitive processes involved in music creation and perception. In the revised course, students will collect field recordings of environmental sounds throughout the Emory community and will create “soundscape” compositions reflecting their own interpretation of these sonic spaces. The Piedmont Project experience made me realize that there could also be a proactive social dimension added in which students not only archive, analyze, and create sonic environments but attempt to effect actual changes and improvements to our local soundscape environment. By presenting the students’ work in site-specific locations around campus, there is an opportunity to educate university administrators, faculty, staff, and students of the benefits of a balanced acoustic ecology at Emory, an important byproduct of the Piedmont Project and Office of Sustainability Initiatives at Emory.

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Emory University  
Atlanta, Georgia

**Music 347 Electronic Music and Soundscape Composition**

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**SYLLABUS****I. RATIONALE**

The technological advancements in music of the late 20th and early 21<sup>st</sup> centuries have already not only created entirely new genres of music composition but have worked their way into the lives of every person in a music-related field, from performers, composers and conductors to educators, and new media sound engineers. With the development of microcomputers, digital synthesizers, and the MIDI specification, sophisticated musical resources are at the disposal of everyone involved in musical pursuits.

**II. GOALS and OBJECTIVES**

The purpose of this course is to provide an understanding and working vocabulary and creative methodologies of the field associated with electronic sound production, acoustic ecology, and soundscape composition.

The study will consist of a technological survey of the primary environment for this field, the recording studio, plus an emphasis on compositional strategies and procedures that includes a brief historical overview of electronic music evolution.

This course will also include a study of recent compositional techniques based on an ecological approach, where real-world contexts inform electro-acoustic music practice. *Soundscape* composition is a prime example. The soundscape composition is a form of electroacoustic music characterized by the presence of recognizable environmental sounds and contexts, the purpose being to invoke the listener's associations, memories, and imagination

related to the soundscape. The ecological approach to music composition integrates models of environmental sound classes with social and cultural elements that contextualize a musical work.

The course will blend aesthetic criticism with applied studio work, including multi-channel electro-acoustic compositions.

### III. REQUIREMENTS

1. Assignments: Students will have weekly assignments consisting of exercises and compositions involving the use of recording techniques, sound synthesis and editing exercises, models of environmental sound classes, and computer sequencing and processing techniques. Assignments will be completed in the M/ARCE studios (3<sup>rd</sup> floor of BRB Bldg.). Each student will have reserve a weekly block of time.
2. Listening: Students will listen to important works in the history of electro-acoustic and computer music.
3. Arts Events / Journal  
Students are also required to attend four contemporary arts events on campus and write a short review of each event.  
Please check the Arts at Emory website for arts events.  
<http://www.arts.emory.edu/>
4. Tests: There will be one midterm test covering information from the lectures, and texts. There will be two listening assignments and tests.
5. Final Project: This will be a composition presented on the last class day that demonstrates examples of all techniques encountered in the semester's study.

### IV. GRADING PROCEDURE

Assignments (4)	40%
Midterm / Listening tests	20%
Concert attendance & journal	10%
Final Project	20%

### V. LEARNING MATERIALS

1. Book: *Essentials of Music Technology*, Mark Ballora, Prentice Hall, 2003
2. Book: *Electronic and Computer Music*, Peter Manning, Oxford University Press, 2004.
3. Online: *Soundscape: Journal of Acoustic Ecology* (a biannual English language publication of the World Forum for Acoustic Ecology)  
(<http://interact.uoregon.edu/MediaLit/WFAE/journal/index.html>)
4. Online: *Handbook for Acoustic Ecology*, editor Barry Truax, 2<sup>nd</sup> ed. 1999  
(<http://www.sfu.ca/sonic-studio/handbook/>)

#### Definition:

##### **Acoustic Ecology**

Acoustic Ecology is the study of sound (including music, speech, noise and silence) as a component of natural and artificial environments, with effects on health, cognition and culture. With links to anthropology (cultural attitudes towards sound, silence, music and noise) and environmental sciences (the effects of acoustical environments on health and culture), Acoustic Ecology is an integrated field of study that incorporates information and approaches from several component fields of study, including Music Cognition, Music Therapy, Cognitive Psychology, Neurology, Environmental Studies, Engineering, Architectural Design, Aesthetics, and Cultural Studies.

Composer, R. Murray Schafer, was one of the first to suggest this approach to composing music in which he defines the term, acoustic ecology, as "the study of the effects of the acoustic environment or soundscape on the physical responses or behavioral characteristics of creatures living within it. Its particular aim is to draw attention to imbalances which may have unhealthy or inimical effects"

How can we achieve a balance in our environment among animal, human and technological sounds? How do our attitudes toward listening and sound-making shape our concepts of music, noise and silence? What are the physical and emotional effects of noise? How can education foster a greater awareness of sound in our world? These are some of the questions that we will address in this course using methodologies drawn from ecologically based compositions.

The ecological approach to music composition suggests a different approach to composing music that may be termed 'composing through sound'. In this approach, processing techniques are used to reveal the inner levels of meaning and symbolism contained within the timbres of familiar sounds. Using these methodologies, we may be able to (re)create models of a more balanced relationship between ourselves and the environment.

## VI. CLASS OUTLINE – Spring Semester 2009

- Jan. 15 History of Electronic Music (Manning - Chap. 1-5)
- Jan. 20, 22 Acoustics (Ballora: Chap. 1, 2, 3)
- Jan. 27, 29 Principles of Audio Recording  
 Digital audio (Ballora: Chap. 9, 10)  
 Acquiring audio (Ballora: Chap. 11)  
 Effects and Mixing (Ballora: Chap. 12)  
 Microphones, Recorders, Mackie d8b Digital Mixer, iPods
- Feb. 3 Listening List Test #1**
- Feb. 5, 10, 12 Multi-Track Recording and Editing: *Digidesign ProTools, Bias Peak, Audacity*
- Feb. 17 Composition Assignment #1: Musique concrete**
- Feb. 19, 24 Software Synthesis - Additive, Subtractive, and Non-linear forms, *Reason and Nord Rack, Analog Synthesis* (Manning: Chap. 6, 10-13)
- Feb. 26 Serial composition techniques
- Mar. 3 Composition Assignment #2: Analog synthesis**
- Mar. 5 Acoustic Ecology, John Cage, indeterminacy (Soundscape: Journal of Acoustic Ecology, Vol.1-4)
- Mar. 9 – 13 SPRING BREAK – NO CLASS**
- Mar. 17, 19 Soundscape composition techniques, field recording (Soundscape: Journal of Acoustic Ecology, Vol. 5-8)
- Mar. 24 Composition Assignment #3: Soundscape Composition**  
**- Environmental field recordings will be made of Emory's campus.**
- Mar. 26 Midterm Exam**
- Mar. 31 Listening List Test #2**

Apr. 2 Processing and MIDI: Effects Processors, MIDI Controllers, Tone Modules, Drum Machines, Time Code, Sampling: Kurzweil K2500, *MachFive*, *Structure* (Ballora: Chap. 6-8) (Manning: 14-17)

Apr. 7 Live performance, Performance Art, Minimality

**Apr. 9 Composition Assignment #4: Sampling**

Apr. 14, 16, 21 Interactive Computer Music Overview (Manning: Chap. 20-22)  
(Ballora Chap. 13)  
Interactive Composition with Computers, *MAX/MSP/Jitter*  
Real-time Performance of Computer Music, *Kyma*, *Chuck*  
Software Synthesis, *Supercollider*

Apr. 23 Podcasting, *iMovie* (Soundscape: Journal of Acoustic Ecology, Vol. 9-10)

**May Final Composition Project**

***The Evocative Landscape* – a mixed media composition that highlights a particular aspect of the Emory campus soundscape. Sounds can include text, human movement, environmental sounds, or synthetic and sampled electronic. These works will be performed in site-specific locations on campus. A video recording of all works will be posted on the MARCE website (<http://www.music.emory.edu/COMPUTER/MARCEhome.html>). Also a DVD of the works will be presented to the Emory President and Provost and College Dean.**