Electronic and Computer Music

Ben Opie, instructor
opek.music@verizon.net, benopie@andrew.cmu.edu; 412-422-6743 (H)
Margaret Morrison Hall room 119a (MTC) 412-268-7471
Section A: T/Th 8:30am
Section B: T/Th 9:30am
Open lab hours to be posted outside the door

Statement of Purpose:
The history of electronic music is relatively short, but the music has been important in its influence. Today, nearly every recording available has been processed or constructed through electronic means. These techniques are built on the research and ideas of groundbreaking electronic music artists of the past one hundred plus years.

The purpose of this class is for you to create new works based on some of those ideas and techniques. Class time will be devoted to tutorials on the software, class discussions of the readings and listening list examples, and lectures on related topics. Each student’s opinion is important, and all are expected to attend and participate. Some project work will be specific to particular software applications; others are more open-ended. MTC is available for your use, or you may use your own equipment; please ask if you have any concerns.

Three major creative projects will be assigned: the first in synthesis and sequencing, the second creating a work in the “Musique Concrete” style, and the third based on the principles of German “Electronische Musik”. Each will be due no less than two weeks from its assignment date. All finished projects will be made publicly available to the other students currently attending the course.

Additionally, there will be a minimum of one secondary project for each major one, on a related topic. In some cases you may be able to use the work from the secondary project towards the major project.

There will be a fourth, final project of largely your own choosing. You will be given the choice of a creating a new work or making a major revision of a previous project. You must be able to reference some of the historical ideas from class in this project, and make a brief presentation to the class on the final day.

There will be assigned readings and listening examples. You will also be expected to regularly make postings to the discussion board on the Blackboard site for this class. There may be other short written assignments on occasion.

Prerequisites: There are no stated prerequisites for this course. However, it is assumed that all students have completed the Introduction to Music Technology (57101/57171)
course, or have equivalent experience. Basic understanding of the use of digital recording/editing and sequencing software is essential.

**Course objectives:** By the end of the course, students should be able:
- to create original compositions using computer technology;
- to achieve a technical mastery necessary to create those compositions;
- to be able to place those original works within an historical context;
- to understand the functions and purpose of the software applications available;
- to identify trends and several major works in electronic music history.

**Required textbook:** Thom Holmes, *Electronic and Experimental Music*, 3rd edition, available in bookstore. Students are expected to have the book by the second class.

**Blackboard:** There is a Blackboard site for this course. You are expected to check it regularly, no less than once a week. Primary and secondary assignments, readings, and discussion board are listed there. There will be *no less than* one discussion board topic every two weeks.

**Recommended software:** There will be several applications we will use in class that are available for free download (legally). All apps are cross-platform and will work on most current computer systems.

Pure Data: [http://puredata.info/downloads](http://puredata.info/downloads)
Not required for this course but suggested:
Praat: [http://www.fon.hum.uva.nl/praat/](http://www.fon.hum.uva.nl/praat/)

**Grading:**
- Three major projects: 40%
- Secondary projects: 20%
- Final project: 20%
- Discussion board and class participation: 10%
- Final test: 10%

Attendance is mandatory for every class. At the third unexcused absence, the teacher reserves the right to lower the final grade by one mark; at five, to give a failing grade. Consistent tardiness (late at least five times without reasonable excuse) will also result in lowering of grade.

Projects submitted late will be marked one grade lower. Extensions will only be considered by the instructor if discussed in advance.

Qualities of a final grade:
- A: all work submitted on time; willing participation during class; excellent attendance without tardiness; timely discussion board postings; projects demonstrate technical excellence and musical imagination.
• B: some projects submitted late; some participation in class; one or two unexcused absences; late or incomplete discussion board postings; projects demonstrate some care and time but perhaps lacking in strong technique or musical strength.

• C: some work submitted late; little participation in class; spotty attendance record; discussion board postings incomplete and submitted late; projects demonstrate lack of care or imagination, clearly seem rushed for submission.

• D: work submitted consistently late; unwilling to participate during class time; poor attendance record with multiple unexcused absences; few discussion board postings completed; some projects not submitted, those that are clearly demonstrate lack of time spent.

**Project submission:** all projects are to be rendered into wav, aiff or (if necessary) mp3 files. Each rendered file must have your name and a clear indication of the assignment (i.e: Your_name_musique_concrete.wav). In your server folder, create a sub-folder for each assignment, clearly titling the folder for the assignment. Place your rendered file in this folder; source files are welcome here as well. Furthermore, place another copy of the rendered file into the appropriate folder inside the “_public” folder.

Finished projects will be shared with the other students in class through iTunes playlists. I consider this class to be a workshop and a forum for ideas, and I have come to believe that sharing one another’s work can be a good way for each of us to learn and expand our own ideas.

Each major project will include at least one Blackboard discussion board posting, defending your work.

**Qualities of project grades:**

• A: submitted on time; demonstrates superior technical achievement; musical idea effectively developed; strong written defense of work.

• B: “default” grade for reasonable submission; most likely submitted on time; work clearly achieved with possibly a few minor technical glitches; effort clearly demonstrated, though possibly with room for development; reasonable written statement of work.

• C: possibly submitted late; some effort displayed but project clearly required more time; obvious technical glitches; weak or no written defense of work.

• D: probably submitted late; weak effort musically and technically; weak or no written defense of work.

**Topics for the week of:**
Aug. 23: introductions; synthesis in Reason (Subtractor); principles of synthesis

Aug. 30: Reason tutorials continued; Reason patches secondary project; basic principles of MIDI
Sept. 6: First major project assignment (synthesis and sequencing); principles of electronic music composition

Sept. 13: early analog instruments: history, methods, influences

Sept. 20: electronic instruments continued; origins of recorded sound: tin to magnetic tape; SPEAR tutorial and assignment;

Sept. 27: Pro Tools review; instrument edit secondary project

Oct. 4: recorded sound and media continued; Principles of Musique Concrete; second major assignment (Musique Concrete);

Oct. 11: music of Pierre Schaeffer; France vs. Germany; Pure Data introduction

Oct. 18: Elektronishe Musik; music of Karlheinz Stockhausen; math in Pure Data

Oct. 25: continued Pure Data tutorials (additive synthesizer) and secondary assignment(s); alternate pitch systems

Nov. 1: third major assignment (Elektronishe Musik); computers and composition; music of Iannis Xenakis

Nov. 8: other software applications available; personal collection listening

Nov. 15: copyrights and creativity; issues and expectations for final project

Nov. 22: open forum and discussion (tentative)

Nov. 29: final test; final presentations

The instructor reserves the right to expand or contract this basic schedule according to the needs of the class.