Music 34: *Advanced Sound Design 2A* *Fall 2013*

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This class explores the interdisciplinary nature of sound and music outside of conventional performance spaces. The course will introduce concepts and technologies relating to mixed media, such as site-adaptive sound art, sound installations, GPS and smartphone installations, performance art, intervention, and environmental sound/sound ecology. Emphasis will be placed on thinking about sound in new ways, and students will be expected to participate in the design, fabrication, and installation of their final projects in the 2nd annual Sound/Unsound show at Dartmouth.

Dist: TAS: S. Topel
T.A.: Carlos Dominguez: Carlos.A.Dominguez.GR@dartmouth.edu
Class Location: Hop Garage Space (RM 130/130A)
X-HOUR: 4:15PM - 5:05PM

Learning Outcomes: At the end of this course you will be able to:

1. demonstrate mastery of a personalized sound-based practice.
2. successfully create and install a sound/multimedia work or demo.
3. develop a perspective on the interdisciplinary boundaries between art, architecture, music, technology, and space.
5. acquire knowledge in alternative sound capture/reproduction methods.

Assessment

1. Final Sound Installation / Non-Traditional Performance	45%
2. Sound Design Labs (SDL)* at 7% each	35%
3. Documentation of Design Labs and Final Projects	15%
4. Class Participation (i.e. attendance, readings, etc.)	10%

Sound Design Labs

The five course labs comprise the heart of the learning activities in the course. Each SDL consists of a written and in-class component, where hands-on evaluation is assessed. The in-class portion of the lab will be led and administered by either the instructor or the teaching assistant, most often on Wednesdays during the class' x-hour.

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Required Text
Handmade Electronic Music: the Art of Hardware Hacking
by Nicholas Collins
https://docs.google.com/file/d/0Bw1qGOKk9zxsYlFZWGJPajU4Q0U/edit?usp=sharing

Other Texts
I will provide additional readings from other sources in the 'Readings' category on Blackboard. Please check ahead to make sure you can access the documents properly. In the event that we use other software, those links will be posted on Blackboard under the 'Software' category.

Required Software (free programs with paid alternatives)
Arduino Software Package (similar to *Processing*): http://arduino.cc/en/main/software
This will be our main interface for programming the Arduinos. You need to download this and have it working by following our first class.

Audacity (compare with Pro-Tools): http://audacity.sourceforge.net/download/
Any general use audio editor/sequencer will work, but it should support 24-bit audio editing.

InkScape (Adobe Illustrator): http://inkscape.org/
Useful for creating 2d schematics for laser cutting, auto-lathing, etc.

Laptop and Mobile Policy
There will be both appropriate and inappropriate times when you should be using your laptop and mobile technologies. Most lectures, sections, or discussions will require all laptops to be closed, i.e. not in use so as not to distract your classmates. In labs where we experiment with software and technology, it is understood that only relevant applications or software is active on your device.

Statement on Physically and Learning Disabled Students
Students with disabilities enrolled in this course who may need disability-related classroom accommodations are encouraged to make an appointment to see me before the second week of the term. All discussions will remain confidential, although the Student Accessibility Services office may be consulted to discuss appropriate implementation of an accommodation requested.

Student Religious Observances

Some students may wish to take part in religious observances that occur during this academic term. If you have a religious observance that conflicts with your participation in the course, please meet with me before the end of the second week of the term to discuss appropriate accommodations.

Office Hours

Office hours are **TBA**, according to student's schedules. I strongly recommend setting an appointment on Google calendar, (link on Blackboard and in email,) in advance, because I may or may not be in my office otherwise. This method guarantees that we will see each other. My office is on the first floor of Hallgarten Hall. Hallgarten is between New Hampshire and Topliff dorms. Please ring the doorbell when as it remains locked at all times.

Honor Principle

It is generally assumed that you adhere to Dartmouth College's *Academic Honor* policy outlined in the ORC. This means that you must acknowledge sources---in any format---whether it be audio samples, written text, etc. Furthermore, given the collaborative nature of an ensemble, you may be asked at the end of the course to provide a statement of contribution to the final collaborative project, which may impact your final grade. Failure to accurately report your sources and contributions may result in serious academic action by the Associate Dean of Students.

Attendance

As mentioned above, 10% of your grade will comprise attendance and participation. **Please note:** more than *three* absences from class or **one** *unexplained absence** from a design critique day, (see below,) will result in a zero for your class participation grade. Since this class involves studio work and critique, it is vitally important that you are present and engaged with the tasks and materials.

*unexplained absence is an absence where it was not prior reported or approved by the professor.

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**Sound Design Labs (SDL) will always go out on Tuesday's and are in (due) the following Tuesday.

week 1. 9/17 Sound Design	Assignments/Labs
TUE 17: Class Overview || Introduction to Sound Art and Installation **WED 18 (x-hour):** *Werner Herzog Class Visit* **THU 19:** Tech. 1 || SDL 01: Analog Basics, I/O, Resonant Mediums.	Readings: ; Embedded Hardware Ch.2 (THU) SDL 01: OUT**
week 2 . 9/25 Perich Residency	
TUE 25: Tristan Perich Visit Part I || Tech. 2 **WED 26:** SDL 02: Arduino, Sensing/Interaction, Digital Processing. **THU 27:** Tristan Perich Visit Part II || Artist Set 1	Readings: ; Handmade Electronic Music Forward, Ch. 4-7. (TUE) SDL 01: IN** SDL 02: OUT
week 3. 10/01	
TUE 1: Tech 3 || Thayer Fab Lab Visit **WED 2:** SDL 03: Design, CAD, Fabrication, 3D Cutting/Printing. **THU 3:** Artist Set 2 || Lecture 2	SDL 02: IN SDL 03: OUT
week 4. 10/08	
TUE 8: Tech 4 || Digital Lab Visit (BVAC) and woodshop visit 6PM **WED 9:** SDL 04: Amplification, Filtering, Feedback. **THU 10:** Process 1: From Concept to Installation Part 1 || Artist Set 3	Readings: ; HEM Ch. 5 and 8. (TUE) SDL 03: IN SDL 04: OUT *Final Project Concept/Prototype:* OUT
week 5. 10/15	
TUE 15: Tech 5 || Process 2: From Concept to Installation Part 2 **WED 16:** SDL 05: Analog/Digital/Design Synthesis **THU 17:** Final Project Draft Critiques || Artist Set 4	SDL 04: IN SDL 05: OUT *Final Project Concept Review (DRAFTS)*

week 6. 10/22	Assignments/Labs
TUE 22: Tech 6 || Artist Set 5 **WED 23:** Curation Space Walkthrough and Assignments **THU 24:** Open Workshop 1 || Open Workshop 2	SDL 05: IN *Final Project* *Concept/Prototype:* IN **BEGIN FABRICATION**
week 8. 10/29	
TUE 29: Open Workshop 3 || Open Workshop 4 **WED 30:** Critiques & Group Discussion **THU 31:** Open Workshop 5 || Open Workshop 6	**FABRICATION CONT.**
week 9. 11/5 Install Week & Preparation for Sound/Unsound	
TUE 5: Open Workshop 7 || Open Workshop 8 **WED 6:** Preparation of Spaces and Logistics **THU 7: INSTALL BEGINS**	**FABRICATION CONT.** **INSTALL BEGINS**
10. 11/12 Sound/Unsound Show	
MON 11: Show Opens at 12PM **TUE 12: Prof. Critique and Walkthrough** **WED 13: Sound/Unsound Begins** **THU 14: Sound/Unsound Reception** **SUN: 17: Show closes to the public**	**INSTALL ENDS**
10. 11/19 Review and Deinstallation	
TUE 19: Final Review and Deinstallation	**DE-INSTALL**

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Presentation Overview

New to this course is a series of presentations on technical and artistic topics. In the first few weeks, the instructor will present the material, but as the course progresses, every student will take responsibility for presenting different topics, either individually or in teams. The aim being to encourage more active learning and collaboration amongst the group. The topics listed below are guidelines and are subject to change by the instructor.

Technical Presentations (Tech 1- 6)

Tech 1: electronics 101, music I/O, and electricity management.

Tech 2: signal/sensor sampling, interfaces, and control.

Tech 3: audio/music specific electronics, hardware hacking, and alternative I/O.

Tech 4: basic acoustics of instruments, forms, and spaces.

Tech 5: interaction, musical machines, music signal processing.

Tech 6: system stability, interfaces, 'elegant' tech.

Artist Presentations (Artist Set 1- 5)

Artist Set 1 *Performance-Centric/ Concerted Installations:* Luigi Russolo, George Brecht, John Cage, Harry Partch, Harry Bertoia Meredith Monk, Marina Abramović, Laurie Anderson, Gerhard Trimpin

Artist Set 2 *Sound (electric/acoustic) Installation Part 1:* Jean Tinguely, Alvin Lucier, Paul DeMarinis, Michael Brewster, Craig Colorusso, Marianna Amacher

Artist Set 3 *Sound (electric/acoustic) Installation Part 2:* Ed Osborn, Ted Apel, Christoph Haag, Shawn Decker, Christin Kubisch, M.W. Burns, Paula Matthusen.

Artist Set 4 *Architectural Installation*: Jacob Kirkegaard, Janet Cardiff, Brian Eno, Tonkin Liu Architects, Alvin Curran

Artist Set 5 *Multi-Media Installation***:** Janet Cardiff and George Bures Miller, Ryoji Ikeda, Phil Nibblock, Yoko Seyama, Seth Cluett

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Additional Software (the complete list with other suggestions)

Digital Prototyping

Arduino Software Package (similar to *Processing*): http://arduino.cc/en/main/software
This will be our main interface for programming the Arduinos. You need to download this and have it working by following our first class.

Audio Design

Audacity (compare with Pro-Tools): http://audacity.sourceforge.net/download/
Any general use audio editor/sequencer will work, but it should support 24-bit audio editing.

Pd (compare with Max 6): http://puredata.info/downloads
A rough equivalent to hardware prototyping. You can test and build simple programs that emulate hardware processes or designs exclusive to digital manipulation.

Supercollider: http://supercollider.sourceforge.net/
Closer to actual programming than Pd, supercollider is a dynamic environment for creating synthesis and algorithmic composition/processing.

Visual/Physical Design

InkScape (Adobe Illustrator): http://inkscape.org/
Useful for creating 2d schematics for laser cutting, auto-lathing, etc.

Google SketchUp (Autocad, Rhino): http://google-sketchup.en.softonic.com/
Standard 3D modeling and architecture tools. Complex to learn, but offers incredible access to 3D printing, auto-lathing in 3D, and other novel manufacturing tools.