

**DESMA 162: Introduction to Sound, Recording, and Audio Design Techniques**  
**UCLA - Design Media Arts**  
**Spring 2011**  
**Mondays and Wednesdays, 10:00am-12:50pm**

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**Course Goals:**

This seminar addresses basic concepts pertaining to sound and digital audio; while also exploring how sound impacts human perception. Emphasis will be placed on learning practical techniques in creating original sound assets for integration with other media. Topics will include the following: the physics of sound; the DAW (Digital Audio Workstation); recording tools and techniques; electronic sound synthesis; MIDI (Musical Instrument Digital Interface); digital audio formats and standards; how we hear; sound and its impact on human orientation.

The goal of this class is to provide a basic understanding of how to conceptualize and execute sound design. Students will be required to learn techniques in order to create original sound design elements at an intermediate level.

**Office Hours:** Wednesday, 2:00-3:00pm or by appointment

**Required Course Materials:**

- 1.) Apple Pro Training Series: Logic Pro 9 and Logic Express by David Nahmani
- 2.) Sony MDR series headphones

3 headphone options:

- Sony MDR-7502 (\$53)
- Sony MDR-7505 (\$85)
- Sony MDR-7506 (\$100)

**Workload:** This is a 5-unit class requiring six weekly class hours plus approximately nine study hours per week.

You will be graded on the following terms:

- 4 sound design projects
- 3 unannounced quizzes (your lowest grade will be dropped from these 3)
- class participation

**Sound Design Projects:**

You will be asked to produce and submit 4 original sound design projects. The projects will require conceptualization, live field recording, digital audio synthesis, mixing, mastering, and digital delivery. At the end of the term, submissions will be assimilated into a 162 class audio exhibit. DIMA faculty and students will be invited to review and make comments on your project.

**Quizzes:**

There will be four unannounced pop quizzes given at various class meetings through out the term. These will be based on lectures, labs, and reading assignments from previous weeks. No make-up quizzes will be given for any reason; however your lowest quiz grade will be dropped.

## **Class Policies**

By taking this class you signal your awareness and acceptance of the following rules: 1. Sound design projects will not be accepted late for any reason barring verifiable catastrophe.  
2. Quizzes cannot be made up for any reason. Your lowest quiz grade will be dropped.  
3. Cell phones must be turned off during class.

The UCLA Academic Integrity Code applies to all portions of this course and will be enforced. (<http://www.deanofstudents.ucla.edu/studentconduct.htm>).

## **Grading:**

Sound Design Projects: 50%

3 Quizzes (10% each): 30%

Class/Lab Participation: 20%

90-100% = A

80-89% = B

70-79% = C

65-69% = D

below 65 = F

Plus and minuses are as follows: B+ means 87 through 89; A- means 90 through 93.

## **CURRICULUM**

### **Introduction: My name is.....**

DESMA 162: What are the class objectives? Why are they important to me as a media artist?  
What are the class policies? How will I be graded? Who is this instructor?

### **Lecture 1: Soundgarden**

Sound: What is it? How is it created? How does it travel? What properties does it share with light?  
What is frequency? What is dynamic range?

John Pierce, "Sound Waves and Sine Waves," Music Cognition, and Computerized

*Sound: An Introduction to Psychoacoustics (page 37-50, 56).*

### **Lecture 2: The White Album**

White Noise: What is it? What properties does it share with white light? How does frequency define pitch? What is doppler effect? What are frequency bandwidth ranges?

John Pierce, "Introduction to Pitch and Perception," Music Cognition, and Computerized Sound:  
*An Introduction to Psychoacoustics (page 57-69).*

Max Mathiews, "What is Loudness?" Music Cognition, and Computerized Sound: *An Introduction to Psychoacoustics (page 71-78).*

### **Lecture 3: MIDI**

What is MIDI? What is communicated? What are the uses?

### **Lecture 4: Recording Technology**

What is the difference between analog and digital recording? What are their respective characteristics?

### **Lecture 5: I Hear You**

Human Hearing: How does the ear work? How does frequency play a role in understanding speech? How does our hearing inform our perception of physical environment?

*Max Mathews, "The Ear and How It Works," Music Cognition, and Computerized Sound: An Introduction to Psychoacoustics (page 1-10).*

*John Pierce, "Hearing in Time and Space," Music Cognition, and Computerized Sound: An Introduction to Psychoacoustics (page 89-103).*

### **Lecture 6: Microphones**

How do microphones work? What are the different types?

### **Lecture 7: Acoustics**

How is sound quality effected by room size, shape, and construction materials?