Introduction to Music and Computers for High School Students

Monday - Friday, June 24-28, 2013

Class meets at the University of California, San Diego from 8:30 a.m. - 3:00 p.m. daily.

Course Overview:

Principles of Music, Animation, and Programming combine in a framework for creativity and learning in this fun and engaging course. Composer and technologist, Dr. Richard Snow leads students on a five-day immersion into the world of creative programming and interactive experiences of music and animation.

With an emphasis on creative projects, students are introduced to both basic and intermediate level tools for creating interactive audio-visual art. Students learn principles of audio editing and sound synthesis, 2d/3d animation, color theory, image manipulation and finally, interactive design.

As a source of inspiration, students will be introduced to the creative projects of world famous composers, animators, and visual musicians.

After participating in this course, student will have an understanding of interactive programming as it relates to music, sound, and simple animation. The student will also have completed their own audio-visual compositions and even designed their own musical instruments using software.

Students may bring their instruments to class, if they wish.

Topics to be covered:

• Audio Editing
• Sound Synthesis
• 2d Animation
• 3d Animation
• Interactive Control
• Audio-Visual Composition

Day 1 - June 24, 2013: Audio Editing and 2d Animation
Pairing a unique sound with an image or color and presenting these pairs in pattern based works is one of the earliest forms of interactive visual music. While learning the basics of the Pure Data programming language, students will make these choices and create short compositions working with Pure Data.
**Day 2- June 25, 2013: Sound Synthesis and 2d Animation**
Create a custom synthesizer in Pure Data and control it to create fixed melodies and pattern based note streams. Pair melodic fragments or even single pitches with the presentation of color. Pair other elements of the sound synthesis to elements in animation.

**Day 3- June 26, 2013: Interactivity and Audio-Visual Media**
Learn how to program and control your synthesizer and visualize interactively. Pair melodic and harmonic patterns with images and manipulate the images in conjunction with changes in the sound.

**Day 4- June 27, 2013: Interactivity, 3d Animation, Audio Effects**
Bring the 3rd dimension to your visualization and add audio effects to your sound synthesis paradigm.

**Day 5- June 28, 2013: Composing with the Computer**
Putting it all together! The final day of the course focuses on putting the finishing touches on the students’ final projects and presenting these projects to the other members of the class.

**Instructor:** Dr. Rick Snow, Visiting Assistant Professor at Tulane University and Director of the Music Science and Technology Program

**Prerequisites:**
- Must be a current high school student in grades 9-12.
- Interested in computers and music
- Willingness to work in teams
- Eager to ask questions, share ideas, and help others in the class

**Course fee:** $235.00. **Registration deadline:** June 7, 2013. **Space is limited to 19 participants.**

If you have any questions regarding this workshop or the application process, please contact Ange Mason via phone at 858 534-5064 or email at amason@ucsd.edu.
Introduction to Music and Computers for High School Students
June 24-28, 2013

Applicant Information:

Name: ___________________________  ___________________________
                        Last                      First                      Middle

Mailing address: _______________________________________________________________
                        Street Address or Post Office Box                        City/State                      Zip

Telephone: ___________________________ Email: ___________________________

Date of birth: ___________________________ Age as of June 30, 2012: ___________________________

Gender: ____ Male       ____ Female

San Diego County Middle or High School: _____________________________________________________
                        School name                      District

Grade completed by June 2012: ___________________________

Email: (optional) ___________________________

Parent or Legal Guardian Information (if applicant is under 18): (Please Print)

Name: ___________________________

Mailing address: _______________________________________________________________
                        Street Address or Post Office Box                        City/State                      Zip

Telephone: (Home) ___________________________ (Work) ___________________________

Email: (Please Print) ___________________________

Course fee: $235.00

Please make your check or money order payable to UC Regents and submit both payment and application in a single envelope to the following address:

Ange Mason
Attn: Student Summer Workshops
San Diego Supercomputer Center
University of California, San Diego
9500 Gilman Drive, Mail Code 0505
La Jolla, CA 92093-0505

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