Extended Syllabus
(2013 1ST Semester)

Course Title	Digital Media Art Workshop	**Course Number**	ANT3010
Credit	3	**Enrollment Eligibility**	2, 3, 4
Class Time	**Fri 10:30~13:15**	**Classroom**	AS 111

Instructor's Photo	**Name: Hyunkyung Ji (& Graham Wakefield)**	**Homepage:**
	E-mail: Ji, H <haruoneday@gmail.com>, Wakefield, G <grrrwaaa@gmail.com>	**Telephone:**
	Office: X 407 **Office Hours: Fri (14:00~18:00) will be set up by mail.**	

I. Course Overview

1. Description

The goal of this class is for students to learn how to create visual and audio expressions through programming, using the most widely used media arts tools today: Processing and Max/MSP/Jitter. Both tools are designed for artists to create computational art using algorithmic techniques. The class starts at beginner level and will end at an intermediate level. Students will do a small assignment each week, and for the mid- and final-term evaluation, they will submit one Processing project and one Max/MSP/Jitter project along with one quiz each (10 to 20 questions) respectively.

2. Prerequisites

Nothing but willing motivation and an open-minded perspective.

3. Course Format (%)

Lecture	Discussion	Experiment/Practicum	Field study	Presentations	Other
50 %	%	50 %	%	%	%

4. Evaluation (%)

mid-term Exam	Final exam	Quizzes	Presentations	Projects	Assignments	Participation	Other
%	%	20 %	%	50 %	30 %	%	%

II. Course Objectives

Students will learn:
1) How to use Processing and Max/MSP/Jitter (technique) and how to create visual and audio systems and art (expression).
2) What is computational art, and what are its structure and components. What is programming, and what are its structure and components.
3) What to express: gain good understanding of the differences of digital media, and computational audio/visual expression.

Creating and expressing sensory data with computers (computational arts) asks students for a very strong interdisciplinarity (especially between liberal arts, science and engineering) and an open-minded attitude. It is very important to develop an open and dedicated mind-set.

III. Course Format

(* In detail)

This class takes a workshop format conducted at the Digital Studio, using computers and computer software. Half of the class will be lecture-based, showing the theory and practice using presentation media and software (50%). The other half will be practice-based, oriented toward work by students (50%).

Students will share their homework through the website such as Tumblr or Naver café. Questions and discussions are encouraged during the class time.

IV. Course Requirements and Grading Criteria

1) Small assignments every week to evaluate how students follow the each week's topics (30%).
(When you submit, please name your assignment as the following format:
yourschoolid_name_date.extension)
2) Mid-term: one creative Processing project & presentation (25%) and quiz (10%).
3) Final-term: one creative MAX/MSP project & presentation (25%) and quiz (10%).

V. Course Policies

Using the software:

1) Processing is the open software and supports cross-platform. Please download and install from: http://processing.org/

2) Max/MSP is commercial software and supports Mac OSX and Windows. You can download a demo version for a month's use or you can purchase a students version if you don't have other access to the software. The TA will have USB dongles with Max/MSP/Jitter licenses available for use during class and lab times.

Max 6 + Gen 12-month Authorization for Students $79.00 (download) http://cycling74.com/shop/individual-academic/

Using the website:

- Regular update (at least once a week) of your work in time is important and will be reflected to the grade.

3) Support for the disabled: seat support/ Extensions on homework's and project submissions/ TA support etc.

VI. Materials and References

Processing: http://processing.org/
Getting Started with Processing
Casey Reas and Ben Fry.
Published June 2010, O'Reilly Media. 208 pages. Paperback.

Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction
Daniel Shiffman.
Published August 2008, Morgan Kaufmann. 450 pages. Paperback.

Help, tutorial, reference file in the Processing software / website

MAX/MSP; http://cycling74.com/
Help, tutorial, reference file in the Max/MSP/Jitter software / website

VII. Course Schedule

(* Subject to change)

Week 1	**Learning Objectives**	Introduce Processing/ GUI/ starting the first draw
	Topics	Processing: Hello, world / downloading / installing / starting the code & Draw
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Check the references: Getting Started with Processing or Learning Proc essing
	Assignments	Submit at least one draw by Export Application to the class website by Sunday 3pm
Week 2	**Learning Objectives**	Learning basic grammar to use Processing
	Topics	Processing: Variables/Response & Media/Motion
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Check the references: Getting Started with Processing or Learning Proc essing
	Assignments	Submit at least one draw by Export Application to the class website by Sunday 3pm
Week 3	**Learning Objectives**	Understanding how to use functions & objects in Processing
	Topics	Processing: Functions & Objects
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice

	Materials (Required Readings)	Check the references: Getting Started with Processing or Learning Processing
	Assignments	Submit at least one draw by Export Application to the Tumblr by Sunday 3pm
Week 4	**Learning Objectives**	Understanding how to use arrays & classes in Processing
	Topics	Processing: Arrays & Classes
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Check the references: Getting Started with Processing or Learning Processing
	Assignments	Submit at least one draw by Export Application to the Tumblr by Sunday 3pm
Week 5	**Learning Objectives**	Extending Processing: extensions (OSC, OpenGL, etc), Processing.js, Java, physical computing
	Topics	Processing: Extending
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Check the references: Getting Started with Processing or Learning Processing
	Assignments	Submit a short paper (1~2 pages) of your favorite Processing project
Week 6	**Learning Objectives**	Share the good projects and check the process to build
	Topics	Processing: Project design (showing good examples)
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	http://processing.org/exhibition/ http://processing.org/learning/topics/ and more.
	Assignments	Submit a short paper of your plan to create a project
Week 7	**Learning Objectives**	Introduce Max/MSP/Jitter & starting the first patch

	Topics	History, features, example projects of Max/MSP/Jitter, How to use reference files in Max/MSP/Jitter
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit your first patch (a hacked example) to the class website by Sunday 3pm
Week 8	**Learning Objectives**	Mid-term
	Topics	Submit and present your final creative Processing project
	Class Work (Methods)	Feedback and evaluation
	Materials (Required Readings)	
	Assignments	
Week 9	**Learning Objectives**	Create your first sound synthesis/ understanding the theory/structure of sound synthesis
	Topics	Audio
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit at least one patch (laptop instrument) to the class website by Sunday 3pm
Week 10	**Learning Objectives**	Synthesis techniques, effect processing, scheduling structures
	Topics	Audio
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material

	Assignments	Submit at least one patch (ring tone maker) to the class website by Sunday 3pm
Week 11	**Learning Objectives**	Understand images as matrix data, video as image sequences/ how to play videos and use the camera/ how to apply effects.
	Topics	Video
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit at least one patch to the class website by Sunday 3pm
Week 12	**Learning Objectives**	Using the GPU for efficient video processing/ video feedback/
	Topics	Video
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit at least one patch (video feedback) to the class website by Sunday 3pm
Week 13	**Learning Objectives**	Integrating audio + video/ communicating between Processing & Max by OSC
	Topics	Integration (Audio + Video, Max + Processing, OSC)
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit at least one patch to the class website by Sunday 3pm
Week 14	**Learning Objectives**	Introduction to real-time 3D graphics in Max/ extending Max using scripting (js, jit.gl.lua)/ extending Max with 3rd party objects (e.g. cv.jit, jit.freenect etc.)
	Topics	3D / Extend

	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit a short paper of your plan to create a project
Week 15	**Learning Objectives**	Creating your Max/MSP project
	Topics	Share good example & information / Check the progress and problem solving
	Class Work (Methods)	Lecture/Discussion with presentation materials & practice
	Materials (Required Readings)	Help, tutorial, reference file in the Max/MSP/Jitter and web material
	Assignments	Submit your final creative Max/MSP/Jitter project
Week 16	**Learning Objectives**	Final-term
	Topics	Final project presentations
	Class Work (Methods)	Feedback and evaluation
	Materials (Required Readings)	
	Assignments	

VIII. Special Accommodations

When Professor H Ji is taking a maternity leave during the course, Professor G Wakefield will instruct the course.
Please check the class time & enrollment eligibility once more. This class opens only on Friday.