

# Design II–B

## Syllabus

Spring 2013 - 2014

Monday, Tuesday and Thursday

Rutgers, Mason Gross School of the Arts

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Art and design, today, refuse to settle into any established medium of expression. Various media, their tools and gadgets converge to each other. They shape content, create new cultural codes and daily practices. It is not only the communication media in convergence. With the complete digitalization of art and design production, the medium constructs the work and the work constructs the medium. So the work and the medium also merge into each other. This course, refusing all industrial norms and standards in art and communication, focuses on possibilities and aesthetics of a wide range of digital media and techniques. In three distinct modules covering motion graphics, graphic programming and physical computing, students will gain insights and a set of skills for digital modes of artistic expression and design.

As the digital technology industries take the lead, industry without art would be brutality<sup>1</sup>.

Humanizing technology is necessary to render it accessible and usable by everyone. Digital art invokes this process and good design is essential to introduce new technologies to everybody.

This experimental interaction survey course focused on possibilities and aesthetics of various digital media and techniques consists of three units respectively on motion, interaction and physical computing. Human machine interfaces, human to human, machine to human, machine to machine interactions are also some topics to be covered throughout this course. In the final part of the course students will be asked to design and produce projects on interaction using breadboards, sensors and programming environment.

At the end of this course it is expected that student will gain knowledge on the modalities of interaction in the context of art and design practice. Throughout the course students will be asked design and produce a project for each unit within some given constraints and also five in-class exercises to be announced on the day. Between each unit of the course readings will be assigned and students will be asked to write response papers after each article.

All Mason Gross students have access to art.rutgers servers and have their personal domains under the URL:

<http://art.rutgers.edu/~username>

Students are responsible for building up a website on this URL to present the work done for the class, publish response papers and also to blog relevant material to course interests. In the first couple of the weeks basic HTML/CSS coding will be taught in-class workshops.

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<sup>1</sup> *Life without industry is guilt. Industry without Art is Brutality.* - by John Ruskin, 1870.

This course will also guide students to make meaningful generalizations for interpreting or evaluating digital experiences and practices in digital media, art, communication and design. The course consists of:

#### **Lectures on issues related to**

- ▶ Motion Graphics
- ▶ Media Architecture
- ▶ Graphic Programming
- ▶ Data Visualization
- ▶ Interaction

#### **Workshops and in-class exercises on**

- ▶ Coding with HTML and CSS
- ▶ 2D animation techniques
- ▶ Video Mapping
- ▶ Programming to create images and animations
- ▶ Programming for interaction
- ▶ Circuit-bending
- ▶ Sensors and physical interaction

#### **Assignment reviews**

These reviews are delivered upon your presentation of the assignment on each submission date. All students in class are encouraged to participate to these reviews and discussions.

#### **Research projects**

There are reading sets to be assigned after each lecture session and you will be responsible to write an annotation about them. During the semester you will be asked to explore similar works to the ones presented in lecture hours and post them on your blog. These writings and collections will help you a lot to put your ideas and knowledge together to write your thesis proposal.

The course blog is: <http://teaching.paganstudio.com/spring2014>  
Tega Brain?

#### **Tools+Materials**

Most of the hardware and the software which are going to be used in class will be provided and be ready in the classroom in our class hours. On the other hand we strongly recommend that you have your own computer at home equipped with relevant software for practice and execution of the assignments. Here is a list of software which we are planning to use during the semester:

- ▶ Text Wrangler
- ▶ Text Mate
- ▶ Cyberduck
- ▶ Processing
- ▶ Arduino
- ▶ Pure Data
- ▶ Adobe Photoshop CS5
- ▶ Adobe Illustrator CS5
- ▶ Adobe After Effects
- ▶ Magic Bullet Looks Suite 10

Some of the assignments will require higher processing speed and larger memories than your own computer has so please prepare yourself to work in the lab at school throughout the semester. If you would like to attend the class with your notebook computer, of course you can but you will be responsible for your own workflow and troubleshooting.

Finally we will be using some DIY electronic boards and sensors for the final project. Basic requirement will be provided by the school but you might want to have your own Arduino UNO board. You may check the following URLs for retailers and a buying guide.

<http://arduino.cc/en/Main/Buy>

<http://www.sparkfun.com>

### **Lateness+absences**

Three arrivals of more than 10 minutes late will count as one absence. After three unexcused absences, your fourth absence will lower your final course grade one level. If you miss class, it is your responsibility to catch up on the work by checking the blog and contacting the instructor via e-mail.

### **Office hours**

Tuesday / Thursday 4:30 pm to 5:30am, and by appointment for Section 2 and 3

Monday 4:30 pm to 5:30am, and by appointment for Section 1

Apart from the office hours please own a separate blog for this course and share your steps and send me a link to atifakin@gmail.com whenever you need an extra eye or when you have anything to ask regarding the assignments. You can also add on Skype . My screenname is atifakin.

### **Assesment**

We will expect you to engage in research, sketch ideas and their offshoots, pursue multiple solutions to a given problem, and experiment widely with concept, imagery, type, materials and composition.

By the end of the term you will be asked to publish a video documentary of your work throughout the semester. This video will include screencasts, live action footage and talking heads. Also by the end of the semester you will be asked to make general presentation of all semester work.

Your course grade will be calculated as follows.

50% : an average of all assignments eliminating the least successful one

20% : final presentation performance, overall assignments

20% : coursework and blog updates

10% : an average of anotations

For project critiques, work must be presented on the announced date, at the beginning of the scheduled critique. No late work will be accepted.

You will have two make up chances during the semester. These two weeks, you may follow from the schedule, you will be given the chance to enhance two previous assignments. Please keep in mind that the make-up's are only for solving for technical problems or optimizing your work. In order to get an upgrade you should keep working on your project even after the deadline and presentation.

A successful student of this course should be able to:

- publish text, images, animations online
- publish information driven by vast amount of online data or from a database
- publish title graphics at broadcasting quality
- relate animation with architecture
- experiment and prototype physical interactive interfaces

Please note that a C grade means you have attended all classes and met satisfactorily the requirements of the course. To earn a higher grade, you must show not only more effort but also a higher level of achievement in your work. There is no guarantee that extra effort will yield outstanding work; and yet it is extremely unlikely that without extra effort you will create interesting work or develop as a designer.

## Haiku in 2D Motion

Haiku in English refers to the Japanese haiku poetic form in the English language. It is impossible to single out any current style, format, or subject matter as definitive. Some of the more common practices in English include:

Use of three lines of up to 17 syllables;

Use of a season word;

Use of a cut or kire (sometimes indicated by a punctuation mark) to compare two images implicitly.

Write and Haiku in 6-8 stanzas. The task is to visualize this typographic content in video format. You will be make use of some 2D animation skills that you will gain and develop with tutorials by your own. You can also make us of some plug-ins on After Effects. For the soundtrack you are free to use any copyright free material or all CC (creative commons) licensed material.

Format is 720P HD video, 60-90 sec. long.

<b>Schedule</b>	Week 01	fundamental principles of motion, animation and video introduction of motion design interface assignment description and designation of the title breakdowns <i>on the side:</i> web publishing workshop
	Week 02	in-class exercise on visualizing a Philip Glass piece <i>on the side:</i> web publishing workshop
	Week 03	review of ideas and sketches in-class production
	Week 04	submission and presentation in class followed by the critique session

### References

Works of Saul Bass

Se7en - Opening Credit

Enter the Void - Opening Credits

Type In Motion: Innovations in Digital Graphics by Jeffrey Bellantoni, Matt Woolman

What Barry says- knife-party.net

+ Various screenings of professional projects by:

d-kitchen

Renascant

Title Credits - Zidane: A Twentyfirst Century Profile

<http://www.youtube.com/watch?v=pDreKioJMxc>

Kyle Cooper interview

<http://youtu.be/Y6kE0FccYkM>

## Video Mapping and Media Architecture

Design an animation which will be projected to some feature in the CSB building. The objective is to transform a basic space into an animated or even interactive experience where in you can alter the perception of the observer. You should start by designating the location that you are going to project and think of an observer experience scenario. Also you may choose a basic input device and method to trigger the system like a photo sensor where a web cam is nothing but an advanced photosensor.

In the second step you will design and program your animation and sound with use of a real-time graphical programming environment for audio, video, and graphical processing.

Format is an interactive site specific installation.

### Schedule

Week 05	literature and reference review Ideation: observing and choosing the site
Week 06	Realization: designing and animating the sequences and projection on site submission and presentation in class followed by the critique session

### References

bubbles  
by Muench | Furukawa  
<http://hosting.zkm.de/wmuench/bubbles>

reactable  
<http://www.reactable.com>

555 KUBIK | facade projection  
by urbanscreen  
<http://vimeo.com/5595869>

Noteput – Interactive music table  
by Jonas Heuer  
<http://vimeo.com/8308494>  
and...  
<http://www.pabloalbuena.com/>  
<http://vimeo.com/23706680>  
<http://vimeo.com/5756657>  
<http://vimeo.com/16881086>  
<http://vimeo.com/12584289>  
<http://www.jordipages.com/>  
<http://videomapping.org/>  
<http://vimeo.com/17396127>

## Data Driven Graphics and Interaction

This third unit of the course consists of two exercises and a project. Exercises can also be presented in printed formats that gives you a chance to present data in a high resolution medium. The online interactive format will allow you to present an interactive artifact. For the second exercise you will be given a set of data. The change in value of one variable can be with respect to time, space or any condition that you may think of. You will be using fundamental graphic coding techniques to handle and visualize these data sets. For example recorded temperature of a single location is variable in relation to time or the same data is variable in regard to location at a fixed time. You are free to use any given set or you may create your own. Basic use of graphic coding with Processing is essential, you will be guided in workshops regarding data parsing and mapping but before this section of the class start, should teach yourself a bare minimum of Processing. Please go to <http://processing.org>, download and follow the tutorials.

For the interactive part of this unit you are asked to design a pet that lives on the screen. Either Processing or Paper.js might be used for the drawing and programming of this interactive artifact.

### References

- Week 07 fundamentals of graphic programming  
in-class exercise on generative pattern design
- Week 08 working with data  
in-class exercise on data visualization
- Week 09 animation and interaction  
review of ideas and sketches
- Week 10 submission and presentation in class followed by the critique session

Processing: open source programming language and environment  
<http://www.processing.org/>

Data visualization with Processing  
<http://www.ibm.com/developerworks/opensource/library/os-datavis/index.html?ca=drs->

The 2009 Feltron Annual Report  
[http://feltron.com/ar09\\_01.html](http://feltron.com/ar09_01.html)

Telekom Product Experience Center Realtime Information Graphics  
<http://projects.zumkuckuck.com/realtime/>

LAIKA  
<http://www.creativeapplications.net/processing/laika-processing/>

Visual Complexity Archive  
<http://www.visualcomplexity.com/vc/>

Information aesthetics blog  
<http://infosthetics.com/>

Information is Beautiful  
<http://www.informationisbeautiful.net/>

## Everyday Interaction

For this final assignment of this course you are asked to turn an everyday object into an interface for computer interaction. Find your object and try to understand in what way you like to interact with it and use it as a metaphor for computer interaction.

A good analysis of the physical properties of your action on that everyday object, the so called the 'interface', will help you a lot to choose the right sensor to create the input.

We will also collaborate with makerspace at Rutgers (<http://makerspace.rutgers.edu>) for some workshop hours. You will have the chance to work in a makerspace and meet with the community.

No specific format.

### Schedule

Week 11	basic electric physics and circuit design introduction of input types and sensors introduction of the programming environment
Week 12	in-class exercise on experimental electronic instrument design - circuit bending sensor testings review of ideas and sketches
Week 13	draft review trouble shooting
Week 14	submission and presentation in site followed by the critique session

### References

Uncharted: User Frames in Media Arts exhibition documentation  
<http://www.santralistanbul.org/exhibits/uncharted/?/uncharted/>

Various screenings in Class



## Readings

### Reading 1

Extracts from 'The Language of New Media'  
by Lev Manovich  
read for annotation

Type in Motion 2  
by Matt Woolman

HTML5 Graphics with SVG & CSS3  
by Kurt Cagle

### Reading 2

Extracts from Digital Mantras: The Language of Abstract and Virtual Worlds  
by Steven R. Holtzman  
read for annotation

Visualizing Data: Exploring and Explaining Data with the Processing Environment  
by Ben Fry

Processing: A Programming Handbook for Visual Designers and Artists  
by Casey Reas, Ben Fry

Processing: Creative Coding and Computational Art  
by Ira Greenberg

The Visual Display of Quantitative Information  
by Edward R. Tufte

Getting Started with Processing  
by Casey Reas, Ben Fry

Else/Where: Mapping — New Cartographies of Networks and Territories  
by Janet Abrams and Peter Hall

### Reading 3

Extracts from Multimedia: From Wagner to Virtual Reality, Expanded Edition  
by Ken Jordan, Randall Packer  
read for annotation

### Reading 4

Extracts from Virtual Art: From Illusion to Immersion  
by Oliver Grau  
read for annotation

## **Reading 5**

Extracts from Modalities of Interactivity and Virtuality

by Jeffrey Shaw

read for annotation

Getting Started with Arduino (Make: Projects)

by Massimo Banzi

Arduino Cookbook

by Michael Margolis

Programming Interactivity: A Designer's Guide to Processing, Arduino, and Openframeworks

by Joshua Noble