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Experimental Media:
Translating the Digital to the Physical

Advanced Computing Center for the Arts and Design
The Ohio State University

May short term, 2017
M/W/F – 12:00 – 4:00pm
T/TH – open lab time 12-4pm

Professor: Isla Hansen
email: Hansen.492@osu.edu

Course Description
Research in the arts in new and computational media often focuses on tasks that result in translating elements of the physical world into the digital. Tools and processes such as 3d scanning, motion capture, data visualization, depth sensing, physics engines, VR, and other digital age technologies prompt us to take input from the real world and classify, archive, visualize, and virtualize what we know about physical reality. This intensive project-based class concentrates efforts in the opposite direction, prompting students to think about translating our now more familiar digital world back into the physical. Students will work with a wide range of artistic and design processes and production methods to facilitate this notion, creating works of electronic and kinetic sculpture in dialogue with virtual worlds. They will be tasked with engaging with both digital and analog techniques to produce a physical animation; translating 3d modeling and design skills into patterning, printing, and sewing skills; and learning basic programming and robotics principles through the use of microcontrollers and computer-controlled manufacturing processes. While prior knowledge of basic 3d modeling, animation, programming, or physical construction is recommended, no prior experience in these areas is required.

Course Objectives:

- Explore the history of tactical media, analog / physical animation techniques, optical illusions and stage magic, as they relate to the history of technology and relationships between the digital and the physical through the history of art and design
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- Learn very basic programming as well as various digital, electronic, and mechanical techniques associated with physical computing and basic robotics to make gestures and movements that don't necessarily need to be useful or functional
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- Experiment with different modes of digital design and physical construction, testing toolkits both old and new, learning to functionally use and adapt to new processes for fabrication that could include: CNC routers, 3d printers, laser cutters, sewing machines, and more.
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- As individuals, continuously redefine our artistic methods and goals as we better understand ourselves in relation to a greater art world, history, and an immense broader culture
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- As a collective group, continuously redefine what it means to be artists making work on, for, with, against, or about our relationship to technology

Course Texts
Note: These books and articles are relevant as whole texts, but optional. Excerpts, shorter readings, and additional articles, will be provided for group readings and discussion and study in and out of class.

- Karen Archey - *Bodies in Space: Identity, Sexuality, and the Abstraction of the Digital and Physical*
- Casey Reas, Chandler McWilliams, and LUST – *Form+Code, In Design, Art and Architecture*
- Katherine Hayles – *How We Became Posthuman: Virtual bodies in cybernetics, literature, and informatics*
- Norman Klein – *The Vatican to Vegas: A History of Special Effects*
- Friedrich Kittler – *Optical Media*
- Marshall McLuhan – *Understanding Media: The Extensions of Man and The Medium is the Massage: An Inventory of Effects*
- David Garcia & Geert Lovink – *The ABC of Tactical Media*
- *Making the Scene: A History of Stage Design and Technology in Europe and the United States* – Oscar Brockett, Margaret Mitchell, Linda Hardberger
- Robert Ausbourne – *Visible Magic: The Art of Optical Illusions*
- Albert Hopkins – *Magic: Stage Illusions, Special Effects and Trick Photography*

Schedule
This schedule is subject to changes. It will be updated online and I will notify you of dramatic differences in class and, if necessary, via reminder emails. Each class I will post to the blog the assignments & reading for the next class as well as art you should be looking at.

WEEK 1 – ACTUATING SOMETHING

Mon
Lecture: Concept of the digital to the physical, examples of physical computing artists and designers, basic principles and theories of robotics
Demos: Microcontrollers, lights, motors, basic robots, CNC router
Research & conception in class
Tues – Lab time (12-4pm)
Weds
Discuss reading & Artist examples
Research, conception, & assisted construction in class
Thurs – Lab time (12-4pm)
Fri
Finish up final tweaks, construction, & installation
Demonstrations of projects, Crit, and discussion

WEEK 2 – MODELING, MAPPING, & PATTERNING

Mon
Lecture: Digital to physical modeling and pattern making for physical construction – artist and designer examples, theories behind mapping and patterning
Demos: 3d modeling, texture mapping, unwrapping UVs & reconstruction, patterning, printing, and sewing
Research & conception in class
Tues – Lab time (12-4pm)

Weds
Discuss reading & Artist examples
Research, conception, & assisted construction in class
Thurs – Lab time (12-4pm)
Fri
Finish up final tweaks, construction, & installation
Demonstrations of projects, Crit, and discussion

WEEK 3 : ZOETROPE

Mon
Lecture: History of analog and physical animation techniques and optical illusions, artist examples, theory of light strobe / shutter speed in relation to human biology
Demos: Zoetrope, 3d modeling, 3d printing, strobe lights, making an LED microcontrollers strobe lights
Research & conception in class
Tues – Lab time (12-4pm)
Weds
Discuss reading & Artist examples
Research & assisted construction in class
Thurs – Lab time (12-4pm)
Fri
Finish up final tweaks, construction, & installation
Demonstrations of projects, Crit, and discussion

WEEK 4 : SYNTHESIS – FINAL PROJECTS (& CONTROLLING THE DIGITAL AGAIN ?)

Mon
Lecture: Multimedia installations / experiences, VR theater, critical engineering manifesto, game controllers, "post-internet" art and methods – artist examples and theory
Demo: controlling the digital with the physical (custom unity control mechanisms), rehash previous project demos, demos per request
Research & conception in class
Tues – Lab time (12-4pm)
Weds
Discuss reading & Artist examples
Research & assisted construction in class
Thurs – Lab time (12-4pm)
Fri
Finish up final tweaks, construction, & installation
Demonstrations of projects, Crit, and discussion

Grading

Assignments - Blog Posts 15%

There will be a few times throughout the semester when I ask you to post to the blog. If you post something productive when you are not required to - in response to a reading or in response to an art work – you will get extra credit.

Participation 20%

At the end of each class I will assess how you contributed to class discussion & critiques. If you miss class, your participation for that day is a 0 and cannot be made up. However, making unrequired (and productive) blog posts will be counted towards extra participation credit.

Projects 40%

Since this is where your creative efforts will shine and where your ideas will coalesce, your projects will count towards a large percentage of your grade (though not the majority). If at any time you are adding to a project after it was due, changing it, or remaking something and you want to show it to me again, I am willing to re-grade it.

Grading on Projects

Projects are graded out of 18 possible points, with the opportunity for 4 extra credit points added to your grade in the event that dialogue about your work prompts really great class discussion or if the class just loves your project (no matter what I think!). If you get 15/18, that is pretty good, you did fairly well in all categories. In percentage terms that's 83%, which is a B. But I will refrain from giving you letter grades for projects.

CONCEPT -
0- 3 points - Background thinking / research
0- 3 points - Creativity – idea novelty
0- 3 points - Intentionality
1- 2 extra credit points - Dialogue

EXECUTION -
0- 3 points - Technique
0- 3 points - Context
0- 3 points - Aesthetics
1-2 extra credit points - Class Feedback

Grade Scale: 93 -100% A, 90 - 92% A-, 87 - 89% B+, 83 - 86% B, 80 - 82% B-, 77 - 79% C+, 73 - 76% C, 70 - 72% C-, 67 - 69% D+, 63 - 66% D, 0 - 62% E

Class Participation

Is a big deal. We are a community who will be reading together, working together, getting to know each other, and looking at each other's expressions of the changing self. This can be very personal and hard at times, but communities like the one we are building are so important to good art making. I expect that each student in this class will attempt to respond to readings, contribute to class dialogue, and participate in critiques of your fellow artists' work. You should behave as equally participating collaborators. I hope that you will not need me to prompt you to speak, but if I should need to, I may call on you. I understand that some people are more outspoken than others, and some of you may feel shy about sharing your ideas. I hope that you will learn in this class to overcome that, but should you feel it is effecting your participation or you feel uncomfortable, please reach out to me and we will work out a way for you to participate in your own manner.

Note on crits

My expectation while we are reviewing the work, thoughts, and ideas of your peers – whether in casual conversation, while going over blog posts, or during critiques of larger works – is that you will treat one another with respect. This includes respecting one another enough to give honest feedback and helpful criticism. Say what you think! We will begin each crit by finding out just the very basics of what the class

sees in the work as "objective" viewers (not necessarily as artist-friends). Based on what we see or how we interact, we will suss out what we believe the artist's intentions to be, possibly hear from the artist her or himself, and then, only after these first three aspects of crits, will we finally give suggestions for how to improve the piece These suggestions will be based on the differences between how the class sees piece itself, the perceived intentions of the artist, and what the artist states they were actually attempting to accomplish.

Department of Art Attendance Policy

Timely and regular attendance is an expectation of all courses in the Department of Art. We understand that each student may upon occasion need to be away from class due to illness or other important matters. The following policy recognizes these life issues while establishing a set of academic standards that must be adhered to.
Attendance Policy: Absences are not excused, Attendance is mandatory in all scheduled classes and labs as all absences in a studio environment impede student progress. For absences occurring during the withdrawal period:
For courses meeting twice per week, students who are absent a sixth (6) time will be required to withdraw from the course.
If the above absence maximums is reached after the withdrawal period, the student will receive a failing (E) grade in the course.

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term "academic misconduct" includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations and artwork created in studio courses. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct at http://studentaffairs.osu.edu/info_for_students/csc.asp. The Foundation Program in the Department of Art adheres to all aspects of this Code of Conduct especially in matters relating to the following: Academic Misconduct, Endangering Health or Safety, Sexual Misconduct, Destruction of Property, and Theft/Unauthorized Use of Property.

Disability Services

Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs. Please contact The Office for Disability Services which is located in 150 Pomerene Hall, 1760 Neil Avenue; Telephone #: (614) 292-3307, TDD #: (614) 292-0901; web address: http://www.ods.ohio-state.edu/ to coordinate reasonable accommodations for studentswith documented disabilities.

Statement on Title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu