

CAMS/MAS 216: Creative Media Manipulation

Course Number: CAMS/MAS 216-01

Term: Spring 2018

Credit: 1, graded

Date & Time: TF 11:10-12:20PM

Location: JAC 372

Instructor: N. Adriana Knouf (nknouf@wellesley.edu; <http://zeitkunst.org>); JAC 357a, x2105

Office Hours: T 2-4PM, or by appointment

Course Description

The arts and humanities are infused with media, from the printed word to digital images, videos, and sound. Knowing how these media are constructed at a fundamental material level means that one can be an active producer of digital artifacts, rather than a passive consumer who cedes creative control to someone else. In this course students will learn programming skills that allow them to create and manipulate images, text, video, sound, and the physical world. Programming languages and environments may include Processing, Python, Arduino, and LilyPad. Lectures, assignments, and programming experiments will ensure that all students understand the material regardless of experience or background. We will regularly illustrate the intersection of the arts and humanities with computation and digital technologies through the reading of historical texts and the close examination of specific works. Skills learned in the course will be useful for future work in the digital humanities among other domains.

Course Goals

At the end of the course, students will be able to

- Understand variables, conditionals, loops, program flow, abstraction, and the creation of simple algorithms
- Analyze a creative problem and break it down into manageable, programmable steps
- Show how to interface the digital world with the physical
- Know how to apply their existing programming knowledge to new programming languages and libraries

- Articulate the ways in which computing affects the humanities
- Discuss some of the canonical works in the history of the intersection of the arts and humanities with computing

Required Texts

- Texts available in Sakai
- Online resources

Recommended Texts

- Daniel Shiffman, *Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction* (Amsterdam: Morgan Kaufmann, 2015).
- Nick Montfort, *Exploratory Programming for the Arts and Humanities* (Cambridge: MIT Press, 2016).

Course Requirements

- Completion of weekly assignments
- Completion of and willingness to discuss assigned readings
- Participation in class discussion
- Mid-term exam
- Final project that synthesizes material from the course

Teaching philosophy

I am of the belief that theory and practice are fundamentally intertwined. This is a course that combines programming as well as the discussion of historical and theoretical texts in the intersection of arts, humanities, and computing. When we're discussing the texts I am less interested in the rehearsal of the minute details of the texts under study and rather want to encourage you to think expansively about how media theory informs media practice, and vice versa. Finally, I want the classroom to be a space where challenging critique and conversation can take place; please be respectful of the opinions and comments of other students in class, and I will do the same.

How to Succeed in this Class

At the bare minimum you must complete the requirements for the course as outlined above. You will need to be willing to push yourself as many of the ideas in the course will likely be new to you. Beyond this you must be willing to take some risks, to challenge yourself to learn a new way of thinking. See the grading rubric for more information.

Assignments and Requirements

This class meets twice a week: on Tuesdays and Fridays from 11:10-12:20PM. I expect you to be present at all classes. We may have additional option sessions scheduled outside of class; more on this later in the semester.

Participation: (10%)

This course will involve, a bit by necessity, a fair amount of lecturing by me. But I also want to ensure that I do not lose *anyone* throughout the course. So please ask questions if things aren't making sense! There is no silly question, nothing that's too basic. We're starting from scratch here, and I want to ensure that everyone has the basics covered.

As well, if you come across some interesting projects that seem to involve creative media manipulation, please bring them to our attention.

We will also be reading some key texts in media studies having to do with coding. Thus class participation when we're discussing these texts is also vital to the success of this course.

Simply attending class will not be enough to earn full participation credit; instead, you must be an *active* participant, someone who comes prepared and engages with all aspects of the class.

Weekly assignments (60%)

Programming is a skill that develops with regular practice. Thus we will have weekly assignments, which STEM courses usually call "problem sets". You will always have at least a week to complete these assignments.

Discussing these assignments with others is allowed, but *no direct copying!* What you turn in should be your own work, based on your own understanding. A more in-depth collaboration policy will be distributed in class.

Final project (30%)

You will complete a final project that incorporates some elaboration of creative media manipulation. We will discuss the appropriate scope of this project, as some things that might appear "easy" are wickedly difficult. More information about the project will be given later in the semester.

Grading

Grading rationale

A grade of "A" is given to students who meet with conspicuous excellence every demand which can fairly be made by the course.

A grade of "B" is given to those students who add to the minimum of satisfactory attainment excellence in not all, but some of the following: organization, accuracy, originality, understanding, insight.

A grade of “C” is given to those students who have attained a satisfactory familiarity with the content of a course and who have demonstrated ability to use this knowledge in a satisfactory manner.

A grade of “D” is a passing grade. There is no grade of D+ or D-.

This course complies with the Wellesley College policy (<http://www.wellesley.edu/registrar/grading/gradingpolicyfaq>). While that policy asks faculty to hold each 100- and 200-level course with 10 or more students to an average of no higher than 3.33, it does not require faculty to grade on a “curve.” There is no arbitrary limit on the number of A’s, B’s, C’s etc., and every student will be assigned the grade she earns and deserves according to the grading standards of the college.

Grading is non-competitive: helping your classmates will never harm your grade.

Grading breakdown

A =	4.0 =	92.5%+
A- =	3.67 =	89.5%-92.4%
B+ =	3.33 =	86.5%-89.4%
B =	3.00 =	82.5%-86.4%
B- =	2.67 =	79.5%-82.4%
C+ =	2.33 =	76.5%-79.4%
C =	2.0 =	72.5%-76.4%
C- =	1.67 =	69.5%-72.4%
D =	1.0 =	59.5%-69.4%
F =	0.0 =	<59.5%

Administrivia

Absence & Late policy

Absences are allowed in three circumstances: personal illness, family crisis, or college-sanctioned activity. In all three cases I ask to be informed as soon as possible in advance so that we can make proper arrangements for completing the missed work—knowing that in true crisis situations advance notice may not be possible. Excused absences are the only cases in which work can be turned in late without penalty. In all other cases, late work will result in a 10% decrease in your grade for each day it is late, and will be accepted up to one week after the due date. *Please do not turn in work late:* it is highly detrimental to your overall performance, makes it very easy to fall behind, is disruptive to the other students who completed the assignments on time, and adds an additional burden on me in terms of finding time to grade your assignment at a later date. It is oftentimes in your best interest to turn in on time a less-than-perfect assignment rather than a slightly-closer-to-perfect late one.

Cold Calling

If I see that you are not participating much in class, I may decide to cold call on you. It thus is important to be prepared to speak at every class session, and to participate regularly. This will produce a class environment that fosters your own learning, as well as that of your fellow students. Your opinions and comments matter.

E-mail

Any questions of a non-personal nature regarding course content, assignments, etc., should be posted to the “General Discussion” Sakai forum, as it is likely other students in the course either have a similar question or can provide you with an answer! Personal questions can be discussed over e-mail, during office hours, or by appointment. I will try to respond to all e-mails within 24 hours. I generally reply to e-mails during business hours during the week, and rarely reply to e-mails on the weekends. Please send e-mail from your Wellesley account to ensure that it does not inadvertently end up in my spam folder.

One final note regarding e-mail: please use proper salutations and grammar in writing your e-mail. (This also goes for forum posts on Sakai.) It might seem like a minor point, but it goes a long way towards producing the environment that is conducive to our joint learning!

Feedback and Comments

I will provide varying levels of feedback on your assignments during the semester. For shorter assignments, this may come in the form of a few short phrases or words. For longer assignments I will provide more extensive comments, not only on content but also on form and mechanics. This feedback might appear at times to be rather direct; know, however, that whenever I provide feedback it is in the service of making you a better writer, a better thinker, a better maker. I am of course more than willing to discuss my feedback with you in person.

Grading concerns

Please take at least 24 hours to review my comments before contacting me regarding any grading concerns. I prefer to do this during office hours or a scheduled appointment, and not before or after class.

Honor code

I want to remind you of the honor code: “As a Wellesley College student, I will act with honesty, integrity, and respect. In making this commitment, I am accountable to the community and dedicate myself to a life of honor.” I expect that you will act accordingly, and you can expect I will do the same.

The College and I take plagiarism seriously. Please be sure to reference any materials you quote or paraphrase, no matter the medium. Let me know if you have any questions regarding this issue.

Pronouns

If you have a preference as to which pronoun you would like me to use with you, please let me know. We will also have the opportunity to let others in the class know your pronouns on the first day and sometime in the middle of the semester, as these sometime change!

Paper formatting and guidelines

Please turn in papers and summaries with proper grammar and spelling. If either detract from my ability to understand your argument, I reserve the right to decrease your grade accordingly.

Papers should be turned in electronically to Sakai, doubled-spaced using a standard serif font (Cambria, Garamond, Georgia, Palatino, Times New Roman, etc.) at a size of 12pt with 1in margins. Please do not try to increase your page count through creative combinations of font, font size, and margins: I've seen it all, I've even tried it myself (and have often failed), and your time would be better spent working on the substance of your paper.

Please be consistent in your choice of citation format; I do not care if you use Chicago, MLA, or APA. As with spelling and grammar, if your citations detract from my ability to understand your paper, I reserve the right to decrease your grade accordingly.

Social Media

It is my policy to not add students as friends on Facebook until they have graduated. I do have a public Twitter handle (@zeitkunst) and if Twitter is your thing and if you are interested, feel free to follow me there (although of course there is no obligation to do so). I have a public website at <http://zeitkunst.org>.

Students with disabilities

If you have a disability and need accommodations, please contact Jim Wice, Director of Disability Services, in Clapp Library 316 to arrange these accommodations. See <http://www.wellesley.edu/disability> for more information.

Schedule

This schedule is subject to change, but any changes will be announced in advance in class and posted to the Sakai site for the course.

Week 1: Introductions

September 4

Class introductions and overview

September 7

Jennifer S. Light, "When Computers Were Women," *Technology and Culture* 40, no. 3 (1999): 455-483, <http://www.jstor.org/stable/25147356>.

Lisa Nakamura, "Indigenous Circuits: Navajo Women and the Racialization of Early Electronic Manufacture," *American Quarterly* 66, no. 4 (2014): 919-941, https://muse.jhu.edu/journals/american_quarterly/v066/66.4.nakamura.html.

Week 2: Variables/Representations

September 11

Variables, types, scope, pixels, coordinate systems.

September 14

Philip E. Agre, "Toward a Critical Technical Practice: Lessons Learned in Trying to Reform AI," in *Social Science, Technical Systems, and Cooperative Work: Beyond the Great Divide*, ed. Geoffrey C. Bowker, Susan Leigh Star, William Turner, and Les Gasser (Lawrence Erlbaum Associates, Inc., 1997), 131-157.

Week 3: Control flow: Conditionals

September 18

If statements. Expressions. Boolean logic.

September 21

Sadie Plant, "The Future Looms: Weaving Women and Cybernetics," *Body & Society* 1, nos. 3-4 (1995): 45-64.

Week 4: Control flow: Loops, loops, loops

September 25

For loops, while loops, repetition

September 28

Mark C. Marino, “Reading Culture through Code,” in *The Routledge Companion to Media Studies and Digital Humanities*, ed. Jentery Sayers (New York: Routledge, 2018), 472-482.

Daniela K. Rosner, “Approaching Design as Inquiry: Magic, Myth, and Metaphor in Digital Fabrication,” in Sayers, *The Routledge Companion to Media Studies and Digital Humanities*, 511-520.

Annette Vee, “Programming as Literacy,” in Sayers, *The Routledge Companion to Media Studies and Digital Humanities*, 445-452.

Week 5: Abstraction

October 2

Functions, program organization.

October 5

Micha Cárdenas, “net.walkingtools.Transformer,” in *Troubling the Line: Trans and Genderqueer Poetry and Poetics*, ed. TC Tolbert and Trace Peterson (Callicoon: Nightboat Books, 2013), 391-393.

Derek Robinson, “Function,” in *Software Studies: A Lexicon*, ed. Matthew Fuller (The MIT Press, 2008), 101-110.

Derek Robinson, “Variable,” in Fuller, *Software Studies: A Lexicon*, 260-266.

Week 6: Object Orientation

October 9

No class, fall break!

October 12

Object oriented programming, classes.

Week 7: Object Orientation, continued

October 16

Object oriented programming, classes.

October 19

Matthew Fuller, *Behind the Blip: Essays on the Culture of Software* (Autonomedia, 2003), "It Looks Like You're Writing a Letter: Microsoft Word", 137-165.

Week 8: Iteration

October 23

Arrays, repetition.

October 26

Wendy Hui Kyong Chun, "On "Sourcery," or Code as Fetish," *Configurations* 16, no. 3 (2008): 299-324.

Week 9: Beginning images

October 30

No class, Tanner Conference!

November 2

Image reading and manipulation

Week 10: Further image manipulation, video

November 6

Reading from the camera, transformations

November 9

Matthew Fuller, ed., *Software Studies: A Lexicon* (The MIT Press, 2008), selections.

Week 11: Shift to python; text manipulation

November 13

Python syntax. Text reading/writing.

November 16

Matthew Fuller, ed., *Software Studies: A Lexicon* (The MIT Press, 2008), selections.

Week 12: Text generation

November 20

Generative poetry.

November 23

No class, Thanksgiving Break!

Matthew Kirschenbaum, "What Is Digital Humanities and What's It Doing in English Departments?," in *Debates in the Digital Humanities*, ed. Matthew K. Gold (Minneapolis: University of Minnesota Press, 2012), 3-11.

Johanna Drucker, "Humanistic Theory and Digital Scholarship," in Gold, *Debates in the Digital Humanities*, 85-95.

Jamie "Skye" Bianco, "This Digital Humanities Which Is Not One," in Gold, *Debates in the Digital Humanities*, 96-112.

Week 13: A bit more Python and text generation

November 27

Further text analysis.

November 30

Using nltk and further text generation.

Maud Jacquin and Sébastien Pluot, eds., *Art by Translation Research & Archives: House of Dust by Alison Knowles* (The James Gallery, CUNY, 2016)

N. Katherine Hayles, "The Time of Digital Poetry: From Object to Event," in *New Media Poetics: Contexts, Technotexts, and Theories*, ed. Adalaide Morris and Thomas Swiss (Cambridge: MIT Press, 2006), 181-209.

Week 14: Lilypad and basic electronics

December 4

Lilypad. Basic electronics.

Friedrich Kittler, “There Is No Software,” in *Electronic Culture: Technology and Visual Representation*, ed. Timothy Druckrey (Aperture, 1996), 331–337.

December 7

Leah Buechley, Mike Eisenberg, Jaime Catchen, and Ali Crockett, “The LilyPad Arduino: Using Computational Textiles to Investigate Engagement, Aesthetics, and Diversity in Computer Science Education,” in *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, CHI ’08 (Florence, Italy: ACM, 2008), 423–432, <http://doi.acm.org/10.1145/1357054.1357123>.

David A. Mellis, Sam Jacoby, Leah Buechley, Hannah Perner-Wilson, and Jie Qi, “Microcontrollers As Material: Crafting Circuits with Paper, Conductive Ink, Electronic Components, and an “Untoolkit,”” in *Proceedings of the 7th International Conference on Tangible, Embedded and Embodied Interaction*, TEI ’13 (Barcelona, Spain: ACM, 2013), 83–90, <http://doi.acm.org/10.1145/2460625.2460638>.

Hannah Perner-Wilson, Leah Buechley, and Mika Satomi, “Handcrafting Textile Interfaces from a Kit-of-no-parts,” in *Proceedings of the Fifth International Conference on Tangible, Embedded, and Embodied Interaction*, TEI ’11 (Funchal, Portugal: ACM, 2011), 61–68, <http://doi.acm.org/10.1145/1935701.1935715>.

Week 15: Further physical/digital connections

December 11

Sensors. Connecting the Lilypad and Processing together.

Final experiments and thoughts.