ENG 395
CODE, COMPUTATION, AND RHETORIC

Spring 2012

T/H 1:30-2:45, T112

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Office Hours: T/H 12-1pm, Ricks Hall Addition

Contents

Course Overview

Introduction to and extensive examination of principles of computation and code in humanities studies. Exploration of historical models and development of the role of code in contemporary media and art. Instruction in critical analysis of and creative composition through a selection of coding languages and structures. Special attention paid to the interdisciplinary nature of code studies.

Learning Objectives

By the end of this semester, you will have learned how to:

- Identify rhetorical principles of computation and code
- Demonstrate a critical understanding of code within artistic and literary frameworks from the 20th and 21st centuries
- Engage in the creative construction of multiple artifacts exploring rhetorical issues related to code and digital technology
- Identify and explore critically and creatively contemporary issues related to code studies and its intersections with graphic design, computer science, literary studies, and philosophy

This course serves to satisfy the “digital technologies” requirement for the LWR English concentration.

Attendance

You have three unexcused absences to use as needed. For each absence beyond the third, I will subtract ten points from your overall score. Six or more absences (excused or unexcused) is grounds for failing the course. See NCSU REG 02.20.3 (Attendance Regulations) for more.

Required Texts / Software

Required Texts:

- Hillis, Daniel. *The Pattern on the Stone: The Simple Ideas That Make Computers Work*. New York: Basic, 1998. Print.
- Reas, Casey and Ben Fry. *Getting Started with Processing.* Sebastopol, CA: O'Reilly, 2010. Print.
- Rushkoff, Douglas. *Program or Be Programmed: Ten Commands for a Digital Age.* New York: OR Books, 2010. Print.

Software:

- Processing. Available as a free download (for Windows, Mac OS X, and Linux/UNIX) from [http://www.processing.org]

Optional Text:

- Motte, Warren, ed. *Oulipo: A Primer for Potential Literature.* Champaign, IL: Dalkey Archive, 2008. Print.

Regarding Software:

The classroom in which we will meet has Processing, MS Office, and OpenOffice installed on its machines, as does the CHASS computer lab. You do not have to purchase MS Office for home use if you would prefer to make use of a machine at one of the listed locations.

Late Work

All assignment due dates are listed in the schedule. Unless otherwise arranged, I only accept papers in electronic form (in .doc, .pdf, or in .pde for Processing sketch files).
For late projects: 1 calendar day late = -1 letter grade; 2-3 calendar days late = -2 letter grades; more than 3 days late = credit only (50% of points). You must turn in all major assignments to pass this class.Occasionally, I will grant extensions on projects for legitimate reasons. Please email a request for an extension at least 24 hours prior to the assignment due date. You must propose an alternate due date.

Participation

Student participation will be evaluated based on involvement in several types of activities taking place throughout the semester:

- Engagement in In-Class Discussions & Activities - Each student is expected to engage him- or herself regularly and actively in class activities and discussions. This is not simply in reference to being present for and attentive in class meetings but also for offering insight into class conversations, interacting with fellow students, and so on.
- Leading Forum Discussions (2) - Each student is responsible for providing two forum discussion questions over the course of the semester (these will be scheduled by the instructor) to help facilitate both in- and out-of-class discussion.
- Responding to Forum Questions - Each student is expected to respond to at least one question a week (before the class meeting that the question is connected to) with a substantive idea that engages the point of the question. Responses may be used to help initiate in-class discussion.

Grading

Your overall grade for the course is calculated based on the accumulation of up to 1000 total points from our major assignments and class participation:

Forum Discussion Posts: 100 pts	|	Critical Assessment Essay: 100 pts
Creative Project 1: 200 pts	|	Midterm Presentation: 50 pts
Creative Project 2: 200 pts	|	Artist's Statement: 100 pts
Final Presentation: 100 pts	|	In-Class Participation: 150 pts

Grade Distribution

A+: 98-100 | A: 93-97 | A-: 90-92
B+: 88-89 | B: 83-87 | B-: 80-82
C+: 78-79 | C: 73-77 | C-: 70-72
D+: 68-69 | D: 63-67 | D-: 60-62
F: 0-59

Academic Integrity

The NCSU policy on the Student Code of Conduct (11.35.1) [http://policies.ncsu.edu/policy/pol-11-35-1] provides an explanation of academic integrity and dishonesty. Student-teacher relationships are built on trust. You must trust that I have made appropriate decisions about the structure and content of the course, and I must trust that you have turned in assignments that are your own. Acts that violate this trust undermine the educational goals of this university.

All work in this course should be original (or remade according to rules set forth in class). Any material that you paraphrase or quote must be cited according to APA style [http://www.docstyles.com/apacrib.htm]. If you would like an explanation of the actions that constitute plagiarism, please review the student code of conduct [http://www.ncsu.edu/student_affairs/osc/code_conduct/].

Disability

Reasonable accommodations will be made for students with documented disabilities. In order to take advantage of available accommodations, students must register with Disablity Services for Students [http://www.ncsu.edu/dso/] at 1900 Student Health Center, Campus box 7509, 515-7653. For more information on NC State's policy on working with students with disabilities, please see the Academic Accommodations for Students with Disabilities Regulation (REG02.20.1) [http://policies.ncsu.edu/regulation/reg-02-20-1].

Course Evaluations

Online class evaluations will be available to complete during the last two weeks of class. You will receive an email message directing you to a website where you can login using your Unity ID. All evaluations are confidential; I will never know how you responded to any question, and you will never know the ratings for any particular instructors.

- Evaluation website: [https://classeval.ncsu.edu]
- Student help desk: classeval@ncsu.edu
- More information about ClassEval: [http://www2.acs.ncsu.edu/UPA/classeval/index.htm]

Course Assignments

All writing assignments must adhere to the following format requirements. Any submission that does not adhere to these requirements will be returned ungraded. You will be responsible for correcting the formatting and re-submitting prior to the paper deadline.

Creative Projects:

- Engagement with code concepts addressed in readings, discussions, and activities. This is not an expectation that a student will be a proficient or "elegant" coder but instead it is an expectation that each student will demonstrate a solid effort to understand and apply the material covered in the course towards rhetorical ends.

Critical Assessment Essay / Artist's Statement / Presentations:

- Engagement with major concepts addressed in readings, discussions, and activities.
- Articulation of applied code concepts for appropriate audience(s).

Discussion Forum Posts:

- As with in-class participation, each student is expected to engage regularly in critically-informed and substantive discourse with his or her classmates and the instructor.

Discussion Forum Posts

Students will maintain regular out-of-class interaction and discussion through the course's Moodle website based on course readings and in-class discussion topics. Over the course of the semester, students will be required to provide at least twelve substantive discussion posts (of a total of seventeen potential class discussions).

Critical Assessment Essay

Students will provide a 4-6 page assessment of a critical issue discussed in class: what is the issue under discussion? Can we trace its background at all? Are there certain rhetorical principles or situations that we can identify as relating to this issue? What opportunities do we have to move forward with the use of these concerns when considering digital technologies?

Creative Project 1

Students (either individually or in small groups of 2-4 students) will create a code-related experiment undertaken in some artistic fashion (meaning that it can incorporate sound, graphical art, literature, performance, etc.). The project does not have to be digital in form, although it may be meant for a digital "end" if the project were to be developed further. The goal of this project is for students to learn about basic principles related to code and its nature in a manner distinct from the traditional academic essay.

Midterm Presentation

Students will provide a six-to-eight-minute presentation of their creative project and explain to the class what principles guided the creation and composition of the experiment. The goal is for each student to have the opportunity to engage in the development of computational methods to produce an artifact that may prove helpful for understanding concepts discussed in the second half of the semester (when similar methods are applied, albeit in often very different manners, to digital media).

Creative Project 2

Students (either individually or in small groups of 2-4 students) will explore a digital medium (the Processing IDE) and its capabilities of serving humanist interests. This is not merely a 'digital art' project, but an effort to understand some of the ways that information or human sensation can be affected by this medium and its interfaces in ways that begin to transcend the possibilities of traditional, conventional media.

Preceding the final version of the project is a rough draft or prototype sketched out by the group (or individual student) to explain what the initial goals for the project are, the intended audience(s) for the artifact, and what potential form(s) the project may exist in upon its completion.

Artist's Statement

Students will compose (individually) 5-7 page documents that incorporate the critical texts and issues discussed in class in order to explore the potential significance(s) of the works created for Creative Project 2 (and, if relevant, Creative Project 1). How do these projects fit into the broader scope of artistic and scholarly work being undertaken currently and/or historically?

Final Presentation

Similar to the midterm presentation, students will provide a ten minute presentation of their second creative project and explain to the class what principles guided the creation and composition of the experiment, what the revision process entailed, what problems were faced (successfully or unsuccessfully), and how the project connects to a broader community of artists, coders, and scholars interested in and working with similar technologies and concerns.

In-Class Participation

Students are expected to contribute substantively to discussions and activities taking place within the classroom. This includes comprehension of and engagement with readings, code languages, and concerns informing the use of code for humanities-related ends.

Course Calendar

Week 1

Tues. 1/10 - Introductions

- **In Class:** Course overview & policies; participant introductions

Thurs. 1/12 - An introduction to rhetoric

- **Reading:** Cline, Andrew. “A Rhetoric Primer.”
  - Introduction
  - The Rhetorical Situation
  - Canons of Rhetoric

Week 2

Tues. 1/17 - What is “new media” and how does it work?

- **Reading:** Manovich, Lev. “What is New Media?”

Thurs. 1/19 - Connecting computer science to the humanities

- **Reading:** Graham, Paul. “Hackers and Painters.”

Week 3

Tues. 1/24 - Digital rhetoric

- **Reading:** Losh, Elizabeth. “Digital Rhetoric: Genres, Disciplines, and Trends.”
- **In Class:** Recognizing rhetorical principles & appeals used in/with digital technologies

Thurs. 1/26 - Digital rhetoric, continued

- **Reading:** Rushkoff, Preface, Introduction, Chapter 1, & Chapter 3, *Program or Be Programmed.*

Week 4

Tues. 1/31 - A primer on Boolean logic

- **Reading:** Hillis, Daniel. "Nuts and Bolts." *The Pattern on the Stone*, 1-20.
- **In Class:** Introducing ourselves to Processing

Thurs. 2/2 - Exploring logical functions in closer detail

- **Reading:**
  - Hillis, "Universal Building Blocks." *The Pattern on the Stone*, 21-38.
  - Reas & Fry, Chapter 3, *Getting Started with Processing*.
- **In Class:** Creating basic sketches in Processing

Week 5

Tues. 2/7 - Computation in literature: Oulipo

- **Reading:**
  - Benabou, Marcel. "Rule and Constraint." *Oulipo: A Primer of Potential Literature*. Ed. Warren Motte, Jr. Champaign, IL and London: Dalkey Archive Press, 2007. 40-46.
  - Queneau, Raymond. *Cent mille milliardes de Poemes (One Hundred Thousand Billion Poems)*.
  - Reas & Fry, Chapter 4, *Getting Started with Processing.*
- **In Class:** Working with changing variables

Thurs. 2/9 - Computation in literature: Hypertext(s)

- **Reading:**
  - de Toledo, Titus. "Sarcophagus.txt."
  - Rushkoff, Chapter 4, Chapter 5, & Chapter 9, *Program or Be Programmed*.
- **In Class:** Discussing relationships between components of an argument

Week 6

Tues. 2/14 - Computation in music: Fugues

- **Reading:**
  - Amati-Camperi, Alexandra. “What is a Fugue?”
  - Bach, Johann Sebastian. “Little” Fugue in G Minor
- **In Class:** Connecting rhetorical aesthetics with computational and combinatorial patterns

Thurs. 2/16 - Computation in art: M.C. Escher

- **Reading:**
  - Goldstein, Laurence. “Reflexivity, Contradiction, Paradox and M.C. Escher.” *Leonardo* 29.4 (1996): 299-308. Web. 12 Sept. 2010. (Available via NCSU Libraries)
  - Escher, M.C. *Relativity.* 1953. The Official M.C. Escher Website. mcescher.com. Web. 12 Sept. 2010.
- **In Class:** Connecting rhetorical aesthetics with computational patterns, continued

Week 7

Tues. 2/21 - How do cybertexts differ from hypertexts?

- **Reading:**
  - Moulthrop, Stuart. Underlanguage. 2008. Web. 12 Dec. 2011.
  - Reas & Fry, Chapter 5, Getting Started with Processing.
- **In Class:** Examining dynamic media and their “mechanisms” for action

Thurs. 2/23 - Merging digital and physical experiences

- **Reading:**
  - Hansen, Mark and Ben Rubin. “Listening Post.” Ear Studio. Web. 12 Dec. 2011.
  - “Listening Post.” Youtube. 19 April 2009. Web. 12 Dec. 2011.
  - Rushkoff, Chapter 6 & Chapter 10, *Program or Be Programmed.*
- **In Class:** Discussing ranges of use for digital information

Week 8

Tues. 2/28 - Midterm presentations

Thurs. 3/1 - Midterm presentations, continued

- **Due:** Creative Project 1

Week 9

NO CLASS (Spring Break)

Week 10

Tues. 3/13 - Understanding what code "does"

- **Reading:**
  - Hillis, "Programming." *The Pattern on the Stone*, 39-59.
  - Reas & Fry, Chapter 8, *Getting Started with Processing.*
- **In Class:** Getting our hands (metaphorically) dirty with Processing

Thurs. 3/15 - Drawing connections between writing and coding

- **Reading:** Matsumoto, Yukihiro. "Treating Code as an Essay." *Beautiful Code: Leading Programmers Explain How They Think*. Sebastopol, CA: O'Reilly, 2007. 477-481.
- **In Class:** Constructing more complicated functions

Week 11

Tues. 3/20 - Code(d) language & arrays

- **Reading:**
  - Berge, Claude. "For a Potential Analysis of Combinatory Literature." *Oulipo: A Primer for Potential Literature.* Ed. Warren Motte, Jr. Champaign, IL and London: Dalkey Archive Press, 2007. 115-125.
  - Reas & Fry, Chapter 10, *Getting Started with Processing.*
- **In Class:** Causing data to transform into "other" data and exploring sets of information

Thurs. 3/22 - Code updates & discussion

NO CLASS

- In lieu of a class meeting, you are expected to post, as a discussion forum post, your Processing code for a sketch you've been working on along with an explanation of what you want it to do, what it does, and what you plan to do to continue building upon that idea & code.
- Your code will not be graded, and I expect everyone to have 'rough draft' code, so to speak. This is a chance for you to talk through what you've been working on and to see (and ask about) what your classmates are working on.

Week 12

Tues. 3/27 - Exploring more fully "multimedia" art and software

- **Reading:** Reas & Fry, Chapter 6, *Getting Started with Processing.*
- **In Class:** Adding image and sound to Processing

Thurs. 3/29 - Creating action vs. creating interface

- **In Class:** Re-examining mouse and keyboard interactivity

Week 13

Tues. 4/3 - Reflecting on coding rhetorically

Thurs. 4/5

- **NO CLASS (Spring Holiday)**

Week 14

Tues. 4/10 - Three-dimensional space

- **Reading:** Reas & Fry, Chapter 11 (to p. 167), *Getting Started with Processing.*
- **In Class:** Manipulating the camera

Thurs. 4/12 - Three-dimensional space, continued

Week 15

Tues. 4/17 - Considering networked data: talking to/with the outside world

- **In Class:** Examining modularity and data transmission

Thurs. 4/19 - To what end? Concerns beyond the course

- **Reading:** Hillis, "Beyond Engineering." *The Pattern on the Stone*, 137-152.

Week 16

Tues. 4/24 - In-class review & workshop day

Thurs. 4/26 - In-class review & workshop day

Week 17 (Exams)

Tues. 5/8 - Presentation Period

Meeting: 1:00pm - 4:00pm
In Class: Final Presentations
Due: Creative Project 2