USCSchool
of Cinematic Arts

CLASS DETAILS

IML 288:   Critical Thinking and Procedural Media (4.0 units)
Instructor: John Carpenter < johncarp@usc.edu, johnbcarpenter@gmail.com>
TA: Catherine Griffiths <griffitc@usc.edu>
Session 001: Tuesday 4:00-6:50pm
Location: SCIL105
Section: 37415D
Recommended preparation: IML 102 or IML 104 or IML 201
Office Hours: By Appointment

COURSE DESCRIPTION

Critical Thinking and Procedural Media is an introductory computer programming course
that explores the use of code to generate digital art and design works. If you're
less familiar with programming (or totally new to it), don't worry — this class starts
with the basics and builds up to more complex ideas (like object-oriented
programming). If you've programmed before, great, we'll take what you know and look at
*the potentials of computational media to define new aesthetics, modes of
representation and structures of communication.*

This course is focused on becoming procedurally literate (being able to think like a
creative coder), and is less concerned about learning a specific programming language.
That said, due to its accessibility and active community of developers, we'll use
Processing to shed light on the theoretical underpinnings of computational media.
Participants will gain proficiency with the Processing IDE and will discover wide-
ranging possibilities for its expressive application.

We'll gain experience through a series of coding exercises, and draw inspiration from
a variety of artistic fields — from drawing, to painting, to sculpture, to gaming, to
interactive installations. By the end of the course, I'm hoping you'll think of
programming as another expressive medium for your art and design practice.

The course will be taught as a workshop with introductions of topics by the professor
and TA, followed by individual conversations and time to work in class. Special thanks
to DJ Johnson, whose syllabus and teaching of this class helped shape this class.

REQUIRED COURSE MATERIALS

Make: Getting Started with Processing by Ben Fry and Casey Reas (2nd Edition, 2015)
<http://www.amazon.com/dp/1457187086 > (~$17)

As students, you won't be required to purchase Processing (if you start to use it
professionally, I'd encourage you to donate time or $ to the Processing Foundation).
Processing runs on Windows and Linux; however, I'll be teaching the workshops on a Mac
(so if you have access to a Mac laptop, it will probably make it easier to follow
along in class).

Processing Software: <http://processing.org >

ADDITIONAL LEARNING RESOURCES

Daniel Shiffman's Video Tutorials <https://www.youtube.com/watch?v=2VLaIr5Ckbs,
http://hello.processing.org >

Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction by Daniel Shiffman (2nd edition, 2015) <http://learningprocessing.com >

for inspiration…
Form+Code in Design, Art, and Architecture by Casey Reas and Chandler McWilliams (2010) <http://www.formandcode.com >
The Nature of Code: Simulating Natural Systems with Processing by Daniel Shiffman (2012) <https://natureofcode.com >
Generative Design by Hartmut Bohnacker, Benedikt Gross, Julia Laub, and Claudius Lazzeroni (2012)
Creative Applications (CAN) <http://www.creativeapplications.net >
#creativecoding <https://www.instagram.com/explore/tags/creativecoding/ >

GRADING

In general, you will be graded using these criteria:
• Conceptual Core: Is the work's thesis clearly articulated? Is the project productively aligned with the weekly topic of discussion? Does the project effectively engage with the primary issues presented in the assignment?
• Research Competence: Does the project display evidence of research and thoughtful engagement with its subject?
• Form and Content: Do structural and formal elements of the code reinforce the conceptual core in a productive way? Is the effectiveness of the project compromised by technical problems? (<— not good)
• Creative Realization: Does the project approach its subject in creative or innovative ways? Does the project use media and design principles effectively? Does the project use code in an interesting way?

You will receive grade feedback in week 08. Grades will be determined as follows:

weekly studies (8%*11)	88%
final project	12%
	_____
	100%

Late weekly projects are up to -4% off, late final is up to -6% (of your final grade).

ATTENDANCE POLICY

Each project builds on knowledge of all the classes before it, so it's important that you're in class. When we start to cover new topics or principals, the discussion will be built on previous work. Two unexcused absences will lower your final grade by 5%. After 2 unexcused absences, each additional unexcused absence will lower your final grade by another 5%.

Each class you're tardy for or leave early for (0 to 15 minutes) will be -.5% off. >30 minutes late = 1 unexcused absence. Excused absence = family emergency, you're sick with a doctor's note, or you're on a sports team and at an away game. If the cause of your absence meets one of these criteria, please send us an email ASAP (but at maximum, within a week of the missed day of class) and we'll figure out a way to make up the missed work. If you're on a sports team, please provide us with the days you'll be missing at the start of the semester.

CELL PHONE AND FOOD POLICY

Cell phones must be silent in the lab space. No talking on the phone in the classroom. Don't pay attention your phone if we're lecturing or talking. Food and drink (aside

from covered water bottles) are not permitted in the lab space. Violations of these
policies will affect your final grade by -1% for every occurrence.

STATEMENT FOR STUDENTS WITH DISABILITIES

Any student requesting academic accommodations based on a disability is required to
register with Disability Services and Programs (DSP) each semester. A letter of
verification for approved accommodations can be obtained from DSP. Please be sure the
letter is delivered to one of us as early in the semester as possible. DSP is located
in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number
for DSP is (213) 740-0776.

STATEMENT ON ACADEMIC INTEGRITY

USC seeks to maintain an optimal learning environment. General principles of academic
honesty include the concept of respect for the intellectual property of others, the
expectation that individual work will be submitted unless otherwise allowed by an
instructor, and the obligations both to protect one's own academic work from misuse by
others as well as to avoid using another's work as one's own. All students are
expected to understand and abide by these principles. Scampus, the Student Guidebook
can be downloaded from <http://studentaffairs.usc.edu/scampus/ >, and contains the
Student Conduct Code in Section 11.00, while the recommended sanctions are located in
Appendix A: <http://www.usc.edu/dept/publications/SCAMPUS/gov/ >. Students will be
referred to the Office of Student Judicial Affairs and Community Standards for further
review, should there be any suspicion of academic dishonesty. The Review process can
be found at: <http://www.usc.edu/student-affairs/SJACS/ >.

Of particular relevance to this course: We'll be using libraries and looking at other
people's code for this course -- both of which are fairly standard practice for
programmers. however, PLEASE ALWAYS REMEMBER TO REFERENCE (CITE) any code that you
adapt or use in your own projects. We'll give examples in class on how to do this
appropriately.

ADDITIONAL POLICIES

School Of Cinematic Arts Student Code Of Conduct <https://cinema.usc.edu/
studentaffairs/conduct.cfm >
USC Student Guidebook (SCampus) <https://policy.usc.edu/student/scampus/ >

SCHEDULE

Week 01. 08/20/2018 <intros: teacher, TA + students, creative coding + processing
                     class activity: sol lewitt
                     reading/viewing: *1/Hello, 2/Starting to Code,*
                     https://processing.org/tutorials/gettingstarted/ >

Week 02. 08/27/2018 <form + color // josef albers, anne truitt, ellsworth kelly
                     reading: *chapter 3/Draw* >

Week 03. 09/03/2018 *<labor day (no class) >*

Week 04. 09/10/2018 <working with variables // takashi murakami
                     reading: *4/Variables*
                     homework 01 due: draw >

Week 05. 09/17/2018 <variables part II. for loops // mondrian, agnes martin

reading: *4/Variables*
homework 02 due: variables I >

Week 06. 09/24/2018 <track the mouse, speed, ease // jung do-jun — *…returning home*
3D drawing? // beverly pepper — *early sculpture w kinetic element*
click, hover, key press // design I/O — *connected worlds*
reading: *5/Response*
homework 03 due: variables II (for loop) >

Week 07. 10/01/2018 <image, text, shape // photomontage: grosz and heartfield, höch
reading: *6/Media*
homework 04 due: response >

Week 08. 10/08/2018 <bouncing ball, hit detection, ++ // atari pong
and/or spotify song artwork video loop // maribou state
reading: *7/Motion*
homework 05 due: media >

Week 09. 10/15/2018 <building blocks of code // matisse — *la gerbe*
reading: *8/Functions*
homework 06 due: motion >

Week 10. 10/22/2018 <object oriented programming // *TBD*
reading: *9/Objects*
homework 07 due: functions >

Week 11. 10/29/2018 <variables and objects —> arrays // *TBD*
reading: *10/Arrays*
homework 08 due: objects >

Week 12. 11/05/2018 <extend: qualitative space, look + feel // o'keeffe, tomory dodge
homework 09 due: arrays >

Week 13. 11/12/2018 <extend: shiffman *nature of code*, (reynolds) flocking, reas
homework 10 due: quality >

Week 14. 11/19/2018 <working session
homework 11 due: extend >
11/22-25/2018 <thanksgiving recess>

Week 15. 11/26/2018 <working session>

Week 16. 12/03/2018 *<Study Days: 12/01 - 12/04/2018 (no class) >*

FINAL EXHIBIT. 12/10/2018 4:30-6:30 p.m. <in-class exhibition >