

# USC Iovine and Young Academy

*Arts, Technology and the Business  
of Innovation*

## ACAD 178: Digital Toolbox: Motion Graphics

**Units:** 2

**Day-Time:** MW 10:30am - 11:50am

**Location:** SKS 404

**Instructor:** Aaron Siegel

**Office:** The Garage

**Office Hours:** TBD

**Contact Info:** [aaronsie@usc.edu](mailto:aaronsie@usc.edu)

**Website:** [www.datadreamer.com](http://www.datadreamer.com)

**IT Help:** <http://iovine-young.usc.edu/ait/index.html>

**Hours of Service:** M-F, 8:30am - 5:30pm

**Contact Info:** [iyhelp@usc.edu](mailto:iyhelp@usc.edu), 213-821-6140

### Catalogue Description:

Eight-week course covering the basics of industry-standard digital video and motion graphics software used for visual effects, non-linear video production and editing. Open only to Arts, Technology and the Business of Innovation students.

### Pre-requisites:

None

### Course Description:

ACAD 178 - Motion Graphics intends to introduce students to tools for the creation of two dimensional animations with a particular focus on generative composition. The course is broken down into two main components; non-linear digital animation using Adobe After Effects, and object oriented programming of generative compositions using Javascript and P5.js. Students will concentrate on conceptual elements of animation, visual composition, timing, color, typography, and interaction design while simultaneously providing context for learning the technical knowledge required to execute complex visual effects in software.

### Learning Objectives:

1. Understand concepts and principles related to visual composition, typography, timing, generative graphics, and interactive engagement.
2. Learn the fundamentals of linear animation and dynamic dynamic.
3. Develop creative ideas around the concepts of pattern, typography, systems, and user engagement.

### Specific Topics to be Covered:

- Fundamentals of linear animation in Adobe After Effects..
- Basic concepts of generative graphics using Javascript and the p5.js library.
- Integrating the skills from the previous toolbox courses into motion graphics design

### Technological Proficiency and Hardware/Software Required:

- Laptop computer with authorized installations of the following software:
  - Adobe Creative Suite (After Effects, Illustrator, Audition)
  - Adobe Brackets or the text editor of your choice.
  - MAMP ([www.mamp.info](http://www.mamp.info))
  - p5.js ([www.p5js.org](http://www.p5js.org))

**Required Readings and Supplementary Materials:**

- Fridsma, Lisa and Brie Gyncild. *Adobe After Effects CC Classroom in a Book*. San Jose: Adobe Press, 2016. Print. (<http://a.co/b17TmvK>)
- McCarthy, Lauren, Casey Reas and Ben Fry. *Getting Started with p5.js: Making Interactive Graphics in Javascript and Processing*. Sebastopol: Maker Media, 2015. Print. (<http://a.co/5ggZ0Ql>)
- Shiffman, Daniel. *The Nature of Code: Simulating Natural Systems with Processing*. New York: Self, 2012 (<http://a.co/6sZXTRd>)

**Assignments:**

1. Top Five Title Sequences (5%)
  - Visit Art of the Title and select four of your favorite title sequences from the site, as well as one that is not on the site that you consider a personal favorite (from movies, television, or the web), and write a short description for each one outlining the characteristics you like about it. Post your top five to your class Tumblr account.
2. After Effects Tutorials (5%):
  - Watch the short After Effects video tutorials and try to follow along on your own screen. These will help fill in some of the gaps of content not covered in the in-class lectures, and as reference for stuff down the road.
3. P5.js Tutorials (5%):
  - Go through the P5.js Text Tutorials: Getting Started and Overview.
4. Nature of Code Ch. 1-4 (5%):
  - Visit the Nature of Code website and read: Introduction, Vectors, Forces, Oscillation, and Particle Systems.
5. Sol Lewitt Animated Wall Drawing (20%):
  - Create an animated composition following the rules presented. Include your After Effects project files in a ZIP file when submitting. The rules must be followed explicitly, but any room for interpretation is encouraged to be played with.
6. 16 Bars (20%):
  - Use 8, 16, or 20 lyrical measures of a song (ie: a verse) to create a short video using kinetic typography animated in sync with the music. Use After Effects and the various text, shape and effects tools to implement the appropriate styles and animations to match the style of music and content of the lyrics. Include your After Effects project files in a ZIP file when submitting.
7. Generative Composition (20%):
  - Using P5.js create a generative animated composition. Your software should make use of variables, loops, objects, and random/noise functions.
8. Interactive Graphics (20%):
  - Use mouse, touch, and keyboard interaction to affect on screen graphics through responsive animation. Find meaningful ways of interacting with your generative graphics in order to make the interactions interesting.

| Grading Breakdown:               |     | Grading Scale:   |              |              |
|----------------------------------|-----|------------------|--------------|--------------|
| Sol Lewitt Animated Wall Drawing | 20% |                  | A = 100 - 93 | A- = 92 - 90 |
| 16 Bars                          | 20% | B+ = 89 - 87     | B = 86 - 83  | B- = 82 - 80 |
| Generative Composition           | 20% | C+ = 79 - 77     | C = 76 - 73  | C- = 72 - 70 |
| Interactive Graphics             | 20% | D+ = 69 - 67     | D = 66 - 63  | D- = 62 - 60 |
| Check-ins (4)                    | 20% | F = 59 and below |              |              |

## Weekly Class Schedule:

| Week | Day 1   | Day 2  |
|------|---|--|
| 1    | Syllabus / Schedule / Assignments.<br>After Effects Interface.<br>Photoshop / Illustrator Pipeline.<br>Importing Illustrator files as Compositions.                               | Checkpoint #1: Top Five Post.<br>Footage, Compositions, Assets.<br>Timeline, Layers, Keyframes.<br>Shapes.<br>Exporting Media.   |
| 2    | No Class: Spring Break!   | No Class: Spring Break!  |
| 3    | Checkpoint #2: After Effects Tutorials.<br>Track Mattes and Masks.<br>Nesting Compositions.<br>Parent/Child Layer Relationships.<br>Motion Blur.                                  | Due: Project #1: Sol Lewitt Animated Wall<br>Drawing.<br>Presentations & Critique.   |
| 4    | Audio in Audition & After Effects.<br>Text Layers.<br>Snapping & Alignment.<br>Effects and Presets.   | 3D Transforms.<br>Lights.<br>Materials.<br>Cameras.  |
| 5    | Time Remapping.   | Due: Project #2: 16 Bars.<br>Presentations & Critique.   |
| 6    | Setting up a p5.js sketch.<br>Basic Syntax, Drawing Functions.<br>Variables, Values, Operators.<br>Conditionals, Loops.<br>Documentation, Reference, Resources.<br>Code Ethics.   | Checkpoint #3: P5.js Tutorials.<br>Functions, Arrays.<br>Classes, Objects.<br>Vectors, Math Functions.<br>Loading/Drawing Images.<br>Photoshop / Illustrator / P5.js Pipeline. |
| 7    | Procedural animation by frame/time.<br>Capturing images from the screen.<br>Capturing video from the screen with Quicktime.<br>Editing documentation with Photoshop and Premiere. | Due: Project #3: Generative Composition.<br>Presentations & Critique.  |
| 8    | Mouse Input.<br>Keyboard Input.<br>Forces, Oscillation, Particle Systems.   | Checkpoint #4: Nature of Code.<br>Audio Input.<br>FFT.<br>Camera Input.  |
| 9    | Work Day!   | FINAL DUE: Project #4: Interactive Graphics.<br>Presentations & Critique.  |

### Academic Conduct:

Plagiarism – presenting someone else’s ideas as your own, either verbatim or recast in your own words – is a serious academic offense with serious consequences. Please familiarize yourself with the discussion of plagiarism in *SCampus* in Part B, Section 11, “Behavior Violating University Standards” <https://policy.usc.edu/student/scampus/part-b>. Other forms of academic dishonesty are equally unacceptable. See additional information in *SCampus* and university policies on scientific misconduct, <http://policy.usc.edu/scientific-misconduct>.

Discrimination, sexual assault, intimate partner violence, stalking, and harassment are prohibited by the university. You are encouraged to report all incidents to the *Office of Equity and Diversity/Title IX Office* <http://equity.usc.edu> and/or to the *Department of Public Safety* <http://dps.usc.edu>. This is important for the health and safety of the whole USC community. Faculty and staff must report any information regarding an incident to the Title IX Coordinator who will provide outreach and information to the affected party. The sexual assault resource center webpage <http://sarc.usc.edu> fully describes reporting options. Relationship and Sexual Violence Services <https://engemannshc.usc.edu/rsvp> provides 24/7 confidential support.

**Support Systems:**

A number of USC's schools provide support for students who need help with scholarly writing. Check with your advisor or program staff to find out more. Students whose primary language is not English should check with the *American Language Institute* <http://ali.usc.edu>, which sponsors courses and workshops specifically for international graduate students. *The Office of Disability Services and Programs* <http://dsp.usc.edu> provides certification for students with disabilities and helps arrange the relevant accommodations. If an officially declared emergency makes travel to campus infeasible, *USC Emergency Information* <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of Blackboard, teleconferencing, and other technology.

**Emergency Preparedness/Course Continuity in a Crisis:**

If an officially-declared emergency makes travel to campus infeasible, USC Emergency Information <http://emergency.usc.edu> will provide safety and other updates, including ways in which instruction will be continued by means of blackboard, teleconferencing, and other technology.