

## CSC 120CPVL – Introduction To Creative Graphical Coding, Spring 2018 First Day Handout

Section 010 meets TuTh 12-1:20 PM, Section 020 meets TuTh 1:30-2:50 PM, Grim 307.

<http://faculty.kutztown.edu/parson> ← Browse from here down to our course page.

**Dr. Dale E. Parson, Old Main 260, parson@kutztown.edu, 484-646-4296**

**Office Hours: Tu 3:30-5:30 PM, W 3:30-5:30 PM, Th 3-4 PM, and by appointment.**

**On Th Feb 15, Mar 8, and Apr 19, office hour will be 10-11 AM instead of 3-4.**

This course is for students who want to go beyond using prepackaged software tools for editing graphical images. Students will create interactive images, videos, and multimedia compositions using a programming language specifically designed for these applications. Projects include program-driven display of basic shapes and imported images, display properties such as texture and shading, display-time image composition, generative art, interaction with user gestures, three-dimensional graphics, animation, video, and additional topics as time allows. The programming environment includes extensive language and library support for these activities, while simplifying the steps in introductory programming. There will be solo and/or team projects.

**Prerequisite:** None

**Textbook:** *Learning Processing, Second Edition*, Daniel Shiffman, ISBN 978-0123944436.

<http://learningprocessing.com/> See also <https://processing.org/>.

**Grading** (A = 92:100, A- = 90:91, B+ = 87:89, B = 82:86, B- = 80:81, C+ = 77:79, C = 70:76, D = 60:69, F = 0:59)

Projects 80% divided equally among the project assignments.

Exam 20% covering core material, shortly after the middle of the term.

### **Programming project assignment grading criteria**

Grading criteria will accompany each assignment handout. Please follow them in satisfying all project requirements. Please re-check requirements when you feel ready to turn in an assignment.

**The academic integrity policy is at <http://cs.kutztown.edu/pdfs/AcademicIntegrityPolicy.pdf>**

Your first reading assignment is to read the above policy statement.

You may openly discuss ideas, algorithms, pitfalls, and the use of programming tools.

You may not share code, test drivers or test data except within groups for group projects.

Group projects, when assigned, have documented partitioning of student responsibilities.

There will be 5 project assignments. There will be a 10% per day late penalty for projects that come in after the due date. We will have one exam worth 20% of the semester grade shortly after midterm.

Class attendance is not graded, but I will be teaching using data sources and concepts both inside and outside the scope of the textbook. You are responsible for all material covered in class, including technical information, coding standards and conventions, verbal specification of assignments, and your questions about topics that are not clear to you. Please, there should be no classroom conversations, cell phones, text messaging, eating, sleeping, obscenities, listening to music or other disruptions of the class.

If you have already disclosed a disability to the Disability Services Office (215 Stratton Administration Building) and are seeking accommodations, please feel free to speak with me privately so that I may assist you. If you have an injury sustained during military service including PTSD or TBI, you are also eligible for accommodations under the ADA and should contact the Disability Services Office.

Please let me know if I pronounce your name incorrectly, or use an incorrect gender pronoun, or if you prefer a nickname or a name different from that in the MyKU roster. Feel free to let me know in private.

Any course work submitted to the instructor (including but not limited to assignments, tests, and projects) may be photocopied and retained for the purpose of assessment, accreditation and quality improvement, after removal of any information identifying the student.

Week	Text chapters	Lecture Topics
1	1,2,3	Pixels & raster graphics, vector graphics, Processing, interaction
2	4,5	Variables, conditions; Intro to programming: make the computer do your work
3	14	<u>Translation, Rotation, Scaling – how to program Edit Transforms</u>
4	6	Loops (iteration): <u>Make the computer repeat drawing-with-variations</u>
5	7	Functions: Creating your own, composite commands
6	8	Classes and objects: <u>Modeling the things that you display</u> (functions+variables)
7	9	Arrays: Manipulating collections (sequences and sets) of displayable things
8	17	Text strings and display of textual data
9		Review of core concepts and an <b>exam</b> somewhere in this time frame.
10	10	Algorithms: Composing with actions (instructions/functions) and things (data)
11	11,12,13	Debugging, libraries, project work session, Math: Interactive, play-as-you-go discovery of how a formula displays itself.
12	15	Images: How to display your photos and other pictures
13	16	<u>Video: How to animate images and capture video sequences</u>
14		Lab sessions
15		<b>Demonstrations with presentations in class or in the KU planetarium.</b>

**Project 1** introduces Processing (<https://processing.org/>) in the context of drawing a mobile, animated avatar surrounded by immobile background and foreground scenery.

**Project 2** enhances Project 1 with a "cookie cutter" function and a loop.

**Project 3** migrates Project 2 from a function to a class that models one or more simulated-world objects.

**Project 4** extends Project 3 to use image files, text, and some enhanced graphical composition.

**Project 5** is a team project. Past team projects have involved teams of 2 integrating their Projects 4, OR a class-wide team project in creating animated paintbrushes for the Kutztown Planetarium dome.

The late penalty for projects is 10% per day late. We will have in-class lab sessions for debugging. These sessions are effective if and only if students come prepared with work-in-progress and with knowledge of problem areas. Skipping classes or coming to a lab session without any project preparation is likely to lead to a bad grade.