

## CMSC427 Fall 2017

### Lab 0 – Parametric Curves and generative art

Due by start of class Thursday, Sept. 7<sup>th</sup>  
Online as combined PDF plus a PDE file

#### *Objectives of lab:*

- Get familiar with Processing
- Working with parametric curves

This is intended to be a lightweight, open-ended lab to get started. There will be some basic requirements, but you can improvise and extend them as you wish.

#### *Requirements:*

Create a Processing sketch to draw an interesting picture using one (or more) 2D parametric curves. The basic requirements are to:

1. Find a parametric curve, of your choice, to use as a starting point. The circle is one example, but there are many others that you should be able to find.
2. Implement the curve in a Processing sketch. You can start with the **Circle.pde** file from the first lecture. Clearly comment which curve you are starting from.
3. Play with the curve by modifying the code. See slide 30 (“Playing with the code”) from the first lecture’s PowerPoint. Change the limits; change the radius and other controlling values; use randomness to change position, color, element size; change the increment.
4. When you get to a curve you’re happy with, document what you changed, save an image, and submit!

To submit you should create a Word or other document that includes the following:

- A. A header with CMSC427 fall 2017 Lab 0 and your name.
- B. A short narrative with a description of what you’ve done – what formula, what modifications, why you liked the modifications.
- C. A copy of the PDE source code from Processing copy and pasted (hint – “copy as HTML” brings along the color coding”).
- D. A copy of your final image copied and pasted into the document.
- E. Save as PDF and submit, along with a separate copy of your PDE file.

This is lightweight, in as long as you show a reasonable effort the result will be fine. The only way to fail is to cheat by copying something from the web. (If you find something that inspires you without direct copying, cite the source.) The narrative is intended to get you to reflect and describe your experiments. You should change about five things, and have about 2 pages.

Optionally, you can extend and modify this assignment as you’d like as long as the spirit of the basic requirements is met. You may use a dynamic sketch; multiple types of parametric curves; multiple copies of the same curve; multiple shapes; 3D if you’re so inclined; Perlin noise if you want to look that up; save as PDF if you’d like to be able to print your result at bill board size; and anything else you’d like to do to make it meaningful to you. Doing the basic requirements gets you 95% of the grade, with the last 5% awarded on interesting results.

This article by Matt Pearson playing with a parametric circle would be A++ work:

<http://freecontent.manning.com/wp-content/uploads/rotational-drawing.pdf>