**EE5373: Data Modeling Using R**

**Fall, 2017**

Department of Electrical and Computer Engineering

**University of Minnesota**

Lab 1: Introduction to R

Due date: See the due date shown on the class moodle page.

Goal: This lab will introduce you to the R environment, including how to read a source file, how to modify an R program, and how to generate and save graphical output.

What to do:

Download and execute the program “lab1-code” from moodle. Experiment with the program by changing the values of the parameters in the “fractal” function call, by changing the computation within the “for” loop in the function, etc. Specifically, try the following:

1. Change the dim parameter to 1000.
2. Change xlo to -3.6 and xhi to 1.2.
3. Change iters to 50, 100, and 1000.
4. Change heat.colors(100) to heat.colors(50).
5. Change heat.colors(100) to each of the following:
	1. topo.colors(100)
	2. terrain.colors(100)
	3. gray.colors(100)
6. Change the expression in the for loop to Z <- Z^3 + C.
7. Make one other interesting change to the program. Be sure to tell me what change you make.

Have some fun with it. Note that after you make each of the changes above, you should start the next problem with the original version of the program.

What to turn in for grading:

Make each of the changes to the program above and save the resulting image to a file. (You can save an image to a file as follows: right-click on the image; select “print”; select “pdf” in the print window; specify the name of the file in the window that pops up). Put all of the images into a single lab report and upload a single pdf file to moodle. Be sure to clearly label each of the images in your report and explain how the change affected the image.