

MATH 4620/8626: ITERATED FUNCTION SYSTEMS

MW 5:30 PM – 6:45 PM | **ZOOM** (*recorded*) | Dr. Roslanowski

A *fractal* is a subset of Euclidean space whose fractal dimension strictly exceeds its topological dimension.

Iterated function systems (IFSs) are a method of constructing fractals; the resulting fractals are often self-similar.

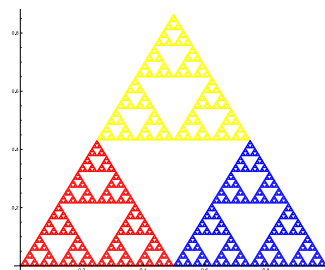
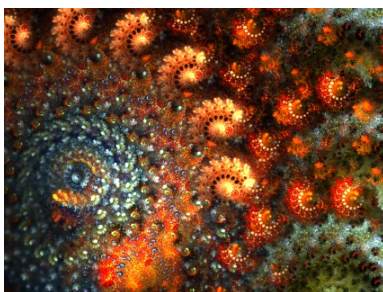
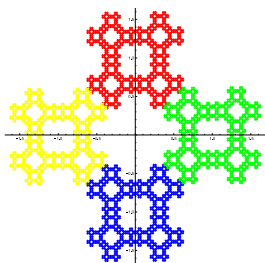
IFSs were conceived in their present form by John E. Hutchinson in 1981 and popularized by Michael Barnsley's book *Fractals Everywhere*. The latter text is the basis for the current course.

Course content description: This proof-oriented course introduces students to the beauty, magic, and applications of fractals and iterated function systems, with emphasis on the mathematics behind it all. Topics range from contractions on hyperspaces and their fixed points to fractal dimensions to Julia and Mandelbrot sets.

Pre-requisites: *MATH 4610/8618 or permission of instructor*

Textbook: *Lecture Notes* written by the instructor will be available to students through Canvas.

We will start with reminding basics of complete metric spaces and compact sets there. Then we will discuss the Hyperspace (of a Euclidean space), contractions and their fixed points, Collage Theorem, parametrizations, addresses on attractors, various fractal dimensions and more.



Want to know more? Enroll in this course for
Spring 2021!

For More Information:

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