

Course Title:

Fractals: Basic Concepts, Computation, and Selected Topics

Course Chair:

Peter Oppenheimer NYIT

Lecturers:

Peter Oppenheimer NYIT

Richard Voss IBM

Heinz-Otto Peitgen University of California, Santa Cruz

Alain Fournier University of Toronto

Topics:

Characterization and Generation for Random Fractals (Voss)

- Introduction to Fractals
- Self-Similarity
- Fractal Dimension
- Modeling of Mountains and Clouds
- Stochastic Music

Computer Rendering of Stochastic Models (Fournier)

- Surface and Texture Synthesis
- Special purpose hardware for stochastic modeling
- Adaptive subdivision

Fractal Modeling of the Living World (Oppenheimer)

- Fractal modeling of trees
- Interactive design and animation of branching structures
- Fractals, Computers and DNA
- Complexity

Fantastic Fractals (Peitgen)

- Mandelbrot Sets
- Julia Sets
- Frontiers in Chaos
- Abstract Mathematical Fractals

Panel Session on Selected Topics

Slide Session of images contributed by Course Attendees.