List of the main topics of the course

1. IFS (no ruler or protractor needed)
2. dimension - similarity, box-counting, Moran equation
3. driven IFS time series $\longleftrightarrow$ driven IFS
4. IFS with memory: forbidden pairs & triples. (if every forbidden triple contains a forbidden pair, the IFS is determined by forbidden pairs)
   IFS without memory: rome, paths to each non-rome from a rome, no loops among non-romes.
5. Multifractals - properties of the $f(\alpha)$ curve from the IFS probabilities.
6. Random fractals - dimensions (randomized Moran equation) Brownian motion, fractional Brownian motion, Lévy flights, multifractal cartoons & Trading Time Theorem
7. Chaos - graphical iteration, fixed points, cycles and their stability
8. Cellular automata (apply the CA rule)
9. Mandelbrot set & Julia sets $z_{n+1} = z_n^2 + c$, combinatorics of the Mandelbrot set - principal series, Farey sequence, multiplier rule.

Algebra of dimensions