LTCC Basic Course

* **Title:** Dynamical Systems

* **Basis Details:**

 - Core Audience: Mathematics

 - Course Format: Core (10h)

* **Course Description**:

- Keywords: flows, maps, periodic points, topological conjugacy, Bernoulli shift, symbolic dynamics,

  deterministic chaos, invariant measures, Ljapunov exponents.

- Synopsis: This course introduces some basic concepts of both continuous-time and discrete-time dynamical systems.

  These systems will be characterised in terms of periodic orbits, attractors, and Lyapunov exponents.

  Techniques such as linearisation, topological conjugacy, and symbolic dynamics with be explained.

* **Recommended reading**:

- R. L. Devaney, An Introduction to Chaotic Dynamical Systems (Westview Press, 2003).
- K. T. Alligood, T. D. Sauer, J. A. Yorke, Chaos (Springer, 1996).
- C. Beck, F. Schloegl, Thermodynamics of Chaotic Systems: An Introduction (CUP, 1995).

* **Format**:

- No. of problem sheets: 5 (optional)
- Electronic lecture notes: yes
- Necessary support facilities: none
- Necessary software requirements for computing facilities: None

Lecture Details

- Lecturer: Prof Franco Vivaldi, QMUL