A soft introduction to algebraic entropy

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Timetable: 10 hrs. First lecture on February 14, 2013, 11:00 (dates already fixed, see the calendar), Torre Archimede, Room 2BC/30.

Course requirements: Linear Algebra, Basic Algebra.

Examination and grading: Seminar on a subject assigned by the Instructor.

SSD: MAT/02, MAT/03

Aim: The course is an introduction to the theory of algebraic entropy of endomorphisms of algebraic structures in the elementary setting of vector spaces. The characterization of the algebraic entropy as the unique additive invariant extending via the Bernoulli shift the dimension invariant of vector spaces to the category of flows is presented.

Course contents:

1. Preliminaries on vector spaces, modules over PID's and the Fekete Lemma.
2. The category of flows of a linear transformation. The Bernoulli shift.
3. Definition, existence and properties of the algebraic entropy.
4. From the entropy to the rank. Addition and Uniqueness Theorems.