

Course Title:	ROLE OF NOISE IN OUT-OF-EQUILIBRIUM STATISTICAL PHYSICS
Instructor	Davide Valenti
N of hours	10
description	Basic concepts of out-of-equilibrium statistical physics as tools to describe stochastic process and noise induced effects in nonlinear systems.
contents	<ul style="list-style-type: none"> • Classic Brownian motion and Langevin forces. Gaussian noise and stochastic processes: description through stochastic differential equations (Langevin approach). • Stochastic processes: description through Chapman-Kolmogorov equation. • Backward Chapman-Kolmogorov equation. Metastable states and Kramers time. Noise enhanced stability. • Dynamics of a Brownian particle subject to an oscillating bistable potential: stochastic resonance. • Langevin equation in the presence of noise sources with different statistical properties.