Random perturbation of differential equations

Dr. D. Barbato¹, Prof. P. Dai Pra²

¹Università di Padova, Dipartimento di Matematica
Email: barbato@math.unipd.it
²Università di Padova, Dipartimento di Matematica
Email: daipra@math.unipd.it

Timetable: 24 hrs. First lecture on May 28, 2014, 15:00 (dates already fixed, see the calendar), Torre Archimede, Room 2BC/30.

Course requirements: Standard knowledge of Probability and measure theory.
Examination and grading: Seminar on a subject assigned by the Instructors

SSD: MAT/06

Aim: The course provides an introduction to stochastic evolutions obtained by adding a random term to a differential equation. After an introduction to the finite-dimensional setting, we will deal with some infinite-dimensional problem, where the starting deterministic evolution is described by a partial differential equation.

Course contents:

1. Introduction to Brownian motion and stochastic integration.
2. Stochastic differential equations in finite dimensions.
5. Nonlinear models of fluid dynamics: stochastic Navier-Stokes equations and related models.