The first lecture scheduled for **Sept 11, 2000** is **cancelled**.

Prerequsites: Some knowledge of Probability and Analysis. In probability the students are expected to have seen limit theorems, martingales and Markov chains. In Analysis some familiarity with measure and integration as well as some functional analysis, especially L_p spaces. A one year CIMS graduate course in probability and a semster of real Analysis will be helpful.

We will meet on **Sept 18**.

Course Outline.

1. Regularity of stochastic processes.
2. Convergence of random walks to Brownian motion.
3. Brownian motion and its martingales.
4. Diffusion processes.
5. Stochastic Integrals.
6. Itô's formula.
7. Stochastic Differential Equations.
8. Random time change and one dimensional diffusions.
9. Brownian motion on the halfline.
10. Convergence of Markov chains to Diffusions.
11. Reflected processes in higher dimensions.

There will be notes posted on the website every week along with exercises. There is no recommended text. but the CIMS library has a set of books on reserve for suggested additional reading.