M.Sc. Applied Statistics programmes
- Stochastic Models and Forecasting
Autumn Term 2013

Lecturer: Anthony C. Brooms
http://www.bbk.ac.uk/ms/brooms/acb.htm
Office Hours: I am very happy to meet with students outside the normal lecture sessions by appointment - this can be arranged via email.

This course forms part of the provision for the M.Sc. Applied Statistics programmes.

Teaching
Thursdays between 6 and 9p.m.
• Weeks 1-5 and 7-11: Mondays between 6 and 9 p.m. - Rm 203 of the Clore Building.

Outline of Topics to be covered:

1. Distribution theory and the Poisson process
2. Markov chains in continuous time
3. Markov chain models of queues
4. Examples of Markov and non-Markov models
5. Renewal processes
6. Regenerative and renewal-reward processes
7. Queues and the M/G/1 model
8. The analysis of time series using SAS
9. Multivariate time series
10. Transfer function modelling

Lectures
A set of notes will be provided at the start of each lecture, or at the start of each major topic. Notes will be written up on the board to emphasize particular points. Students can read around the course by using one or more of the recommended texts, perhaps for extra clarification; however, the notes are intended to be fairly self-contained.
**Recommended Texts**

Later editions of these may be available from bookstores, however, those listed below should suffice.

**Markov Processes, Regenerative Processes and Queues**

S. M. Ross *Introduction to Probability Models* (9th Edition), London: Academic Press, 2007. (The relevant sections of earlier editions are just as good for the purposes of this course.)

**Time Series**