# 53.304 Stochastic Processes I

**Staff**: Lecturer in charge: Prof. Xuerong Mao.

**Students**: Compulsorily - BSc Mathematics & Statistics (3rd year).

**Pre-requisites**: Essential – 53.201.

**Timetable**: Lecture: Wk1-12, Tue 16:00 (L210), Thu 14:00 (McCance 2); Tutorial: Odd weeks, Thur 13:00 (GH515).

**Aims**: To present the underlying ideas of simple stochastic processes and the associated parts of probability theory.

**Syllabus**: Revision of probability, simple Markov chains, random walks, branching processes, Poisson process, simple queues.

**Outcomes**: On completion of this class the student should

- be able to use the appropriate areas of probability theory;

- be able to analyse simple Markov chains, branching processes, and Poisson processes;

- be able to make appropriate analyses of simple queueing situations.

**Texts**:

- Grimmett G. & Welsh D., Probability, an Introduction (OUP). ISBN: 0198532644.

- Higgins, J.J. & Keller-McNulty, S., Concepts in Probability and Stochastic Modelling (Duxbury Press). ISBN: 0534231265.

- Taylor H.M. & Karlin S., Introduction to Stochastic Modelling (Academic Press). ISBN: 0126848874.

**Assessment**: 2-hour Degree Examination in January with August resit.

**Information on WWW**: Course details, lecture notes, class notices, smaples of past exam papers etc can be founded at

http://spider.science.strath.ac.uk