Course Programme TMS165/MSA350 Stochastic Calculus Part I, 7.5 credits, 1st quarter Fall 2012

Responsible teacher. Patrik Albin (Lectures 1-12), room L3072 Mathematica Sciences, email palbin@chalmers.se, tel. 31 772 3512.

Other teachers. Stig Larsson (Lectures 13-14), room L2078, email stig@chalmers.se, tel. 31 772 3543.

Course web-page. http://www.math.chalmers.se/Stat/Grundutb/CTH/tms165/1213/

Responsible university unit. Department of Mathematical Statistics, Mathematical Sciences, Chalmers Tvärgata 3. Expedition: Monday-Friday 9 am - 1 pm.

Literature. *Fima C. Klebaner: Introduction to Stochastic Calculus with Applications, Third Edition 2012*, available from Cremona Chalmer's bookshop. (The parts of the third edition we use do not differ from the second edition which can thus be used without any problems whatsoever.) A few theoretical additions to Klebaner's book (see "Contents of course" below). Lecture notes on applications and lecture notes on numerical methods available from the course web-page.

Content of course. Selections from and a few additions to material in Chapters 1-6 and 10 of Klebaner's book. Details of these selections and additions are available from the course web-page. Lecture notes on applications and lecture notes on numerical methods, both available from the course web-page. The course is given in english.

Examination. Written exam 4 hours am Tuesday 23 October 2012, with reexams am Friday 18 January 2013 and am Wednesday 3 April 2013. No aids are permitted. The written exam will have 6 tasks that are worth 5 points each. Of the maximal total 30 points you need 12 points for grade 3/G, 18 points for grade 4, 21 points for grade VG and 24 points for grade 5, respectively.

It is an outspoken intention that all students that have worked properly with the home exercises should do correspondingly well on the written exam.

Admission and registration. Students that have not been admitted to the course or registered for it are very welcome anyway! Advice on how to register will be offered by Patrik at the lectures.

Lectures	**Day**	**Time and place**	**Programme**
Lecture 1	Tuesday 4 September	3.15-5 pm in MVF33	Ch. 1 in Klebaner's book
Lecture 2	Wednesday 5 September	1.15-3 pm in MVF33	Ch. 2 in Klebaner's book
Lecture 3	Tuesday 11 September	3.15-5 pm in MVF33	Ch. 2 in Klebaner's book
Lecture 4	Wednesday 12 September	1.15-3 pm in MVF33	Ch. 3 in Klebaner's book
Lecture 5	Tuesday 18 September	3.15-5 pm in MVF33	Ch. 3-4 in Klebaner's book
Lecture 6	Wednesday 19 September	1.15-3 pm in MVF33	Ch. 4 in Klebaner's book
Lecture 7	Tuesday 25 September	3.15-5 pm in MVF33	Ch. 4 in Klebaner's book
Lecture 8	Wednesday 26 September	1.15-3 pm in MVF33	Ch. 5 in Klebaner's book
Lecture 9	Monday 1 October	3.15-5 pm in MVF33	Ch. 5-6 in Klebaner's book
Lecture 10	Tuesday 2 October	3.15-5 pm in MVF33	Ch. 6-10 in Klebaner's book
Lecture 11	Wednesday 3 October	1.15-3 pm in MVF33	Ch. 10 in Klebaner's book
Lecture 12	Course week 6	Electronical lecture	Applications
Lecture 13	Monday 15 October	3.15-5 pm in MVF33	Numerical methods
Lecture 14	Tuesday 16 October	3.15-5 pm in MVF33	Numerical methods

Exercises. The course have no class room exercises. Instead students should study the following solved exercises carefully and then continue to work with the home exercises. Help with the home exercises are offered by Patrik Albin, primarily by means of email communication, but also in person when there is opportunity for that.