

Course Programme TMS165/MSA350 Stochastic Calculus, 7.5 credits, 1st quarter Fall 2016

Responsible teacher. Patrik Albin (Lectures 1-24), room L3072, email palbin@chalmers.se

Course web-page. <http://www.math.chalmers.se/Stat/Grundutb/CTH/tms165/1617/>

Responsible university unit. Department of Mathematical Statistics, Mathematical Sciences, Chalmers Tvärgata 3. Expedition: Monday-Friday 11 am - 1 pm.

Literature. *Fima C. Klebaner: Introduction to Stochastic Calculus with Applications, Third Edition 2012*, available from Cremona Chalmers's bookshop. 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.

Lectures. Lectures take place at the times and places listed below. The schedule for the content of the lectures is somewhat approximate – we will simply let things take the time they require.

| Lectures | Day | Time and place | Programme |
|------------|------------------------|----------------------|----------------------|
| Lecture 1 | Tuesday 30 August | 3.15-5 pm in Euler | Ch. 1-2 in Klebaner |
| Lecture 2 | Wednesday 31 August | 10-11.45 am in MVF33 | Ch. 1-2 in Klebaner |
| Lecture 3 | Wednesday 31 August | 1.15-3 pm in Euler | Ch. 1-2 in Klebaner |
| Lecture 4 | Tuesday 6 September | 3.15-5 pm in Euler | Ch. 1-2 in Klebaner |
| Lecture 5 | Wednesday 7 September | 10-11.45 am in MVF33 | Ch. 3 in Klebaner |
| Lecture 6 | Wednesday 7 September | 1.15-3 pm in Euler | Ch. 3 in Klebaner |
| Lecture 7 | Thursday 8 September | 10-11.45 am in MVH12 | Ch. 1-2 Exercises |
| Lecture 8 | Monday 12 September | 1.15-3 pm in Euler | Ch. 3 Exercises |
| Lecture 9 | Tuesday 13 September | 3.15-5 pm in Euler | Ch. 4 in Klebaner |
| Lecture 10 | Wednesday 14 September | 10-11.45 am in MVF33 | Ch. 4 in Klebaner |
| Lecture 11 | Wednesday 14 September | 1.15-3 pm in Euler | Ch. 4 in Klebaner |
| Lecture 12 | Tuesday 20 September | 3.15-5 pm in Euler | Ch. 5 in Klebaner |
| Lecture 13 | Wednesday 21 September | 10-11.45 am in MVF33 | Ch. 5 in Klebaner |
| Lecture 14 | Wednesday 21 September | 1.15-3 pm in Euler | Ch. 5 in Klebaner |
| Lecture 15 | Thursday 22 September | 10-11.45 am in MVH12 | Ch. 4 Exercises |
| Lecture 16 | Monday 26 September | 1.15-3 pm in Euler | Ch. 5 Exercises |
| Lecture 17 | Tuesday 27 September | 3.15-5 pm in Euler | Ch. 6 in Klebaner |
| Lecture 18 | Wednesday 28 September | 10-11.45 am in MVF33 | Ch. 6 in Klebaner |
| Lecture 19 | Wednesday 28 September | 1.15-3 pm in Euler | Ch. 6-10 in Klebaner |
| Lecture 20 | Tuesday 4 October | 3.15-5 pm in Euler | Ch. 10 in Klebaner |
| Lecture 21 | Wednesday 5 October | 10-11.45 am in MVF33 | Ch. 10 in Klebaner |
| Lecture 22 | Wednesday 5 October | 1.15-3 pm in Euler | Applications |
| Lecture 23 | Thursday 6 October | 10-11.45 am in MVH12 | Ch. 6 Exercises |
| Lecture 24 | Monday 10 October | 1.15-3 pm in Euler | Ch. 10 Exercises |
| Lecture 25 | Tuesday 11 October | 3.15-5 pm in Euler | Numerical methods |
| Lecture 26 | Wednesday 12 October | 10-11.45 am in MVF33 | Numerical methods |
| Lecture 27 | Wednesday 12 October | 1.15-3 pm in Euler | Numerical methods |
| Lecture 28 | Thursday 13 October | 10-11.45 am in MVH12 | Numerical Exercises |

Exercises. Students should study the solved exercises carefully and then continue to work with the non-solved home exercises. Exercises will be dicussed during Monday and Thursday lectures with preference given to the non-solved home exercises (as the solved ones have been solved already ...).

Examination. Written exam 4 hours am Tuesday 25 October 2016, with reexams am Wednesday 4 January 2017 and in latter part of August 2017. Permitted aids on the written exam are 2 sheets (=4 pages) of hand-written notes (computer print-outs and/or xerox-copies are not allowed). The written exam has 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.

After an exam has been graded you recive an official result mail from Ladok with your result. After that you can goto the expedition (see above) and look at your exam and the grading. If you want you can make complaints about the grading on a form that is available at the expedition.