Course Programme TMS165/MSA350 Stochastic Calculus, 7.5 credits, 1st quarter Fall 2021

Responsible teacher. Patrik Albin (Lectures 1-21), room L3072, email `palbin @ chalmers.se`

Course web-page. `http://www.math.chalmers.se/Stat/Grundutb/CTH/tms165/2122/`

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 Chalmer'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.

Examination. Written exam 4 hours am Tuesday 26 October 2021 with reexams January 2022 and August 2022. 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.

Permitted aids on written exams at campus are 2 sheets (=4 pages) of hand-written notes (computer print-outs and/or xerox-copies are not allowed). For home exams all aids are permitted.

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.

Lectures. Lectures take place at times and places listed below. The schedule for the content of lectures is somewhat approximate – we simply let things take the time they require. When any of the Thursday lectures marked "Spare time" will be used students will be notified at latest the preceeding Wednesday afternoon orally during lecture time and also by Canvas email message.

Lectures	Day	Time and place	Programme
Lecture 1	Tuesday 31 August	3.15-5 pm in Euler	Ch. 1 in Klebaner
Lecture 2	Wednesday 1 September	1.15-3 pm in Euler	Ch. 2 in Klebaner
Lecture	Thursday 2 September	10-11.45 am in MVF33	Spare time
Lecture 3	Friday 3 September	8-9.45 am Digital	Ch. 1-2 Exercises
Lecture 4	Tuesday 7 September	3.15-5 pm in Euler	Ch. 3 in Klebaner
Lecture 5	Wednesday 8 September	1.15-3 pm in Euler	Ch. 3-4 in Klebaner
Lecture	Thursday 9 September	10-11.45 am in MVF33	Spare time
Lecture 6	Friday 10 September	8-9.45 am Digital	Ch. 3 Exercises
Lecture 7	Tuesday 14 September	3.15-5 pm in Euler	Ch. 4 in Klebaner
Lecture 8	Wednesday 15 September	1.15-3 pm in Euler	Ch. 4 in Klebaner
Lecture	Thursday 16 September	10-11.45 am in MVF33	Spare time
Lecture 9	Friday 17 September	8-9.45 am Digital	Ch. 4 Exercises
Lecture 10	Tuesday 21 September	3.15-5 pm in Euler	Ch. 5 in Klebaner
Lecture 11	Wednesday 22 September	1.15-3 pm in Euler	Ch. 5 in Klebaner
Lecture	Thursday 23 September	10-11.45 am in MVF33	Spare time
Lecture 12	Friday 24 September	8-9.45 am Digital	Ch. 5 Exercises
Lecture 13	Tuesday 28 September	3.15-5 pm in Euler	Ch. 6 in Klebaner
Lecture 14	Wednesday 29 September	1.15-3 pm in Euler	Ch. 6, 10 in Klebaner
Lecture	Thursday 30 September	10-11.45 am in MVF33	Spare time
Lecture 15	Friday 1 October	8-9.45 am Digital	Ch. 6 Exercises
Lecture 16	Tuesday 5 October	3.15-5 pm in Euler	Ch. 10 in Klebaner
Lecture 17	Wednesday 6 October	1.15-3 pm in Euler	Applications
Lecture	Thursday 7 October	10-11.45 am in MVF33	Spare time
Lecture 18	Friday 8 October	8-9.45 am Digital	Ch. 10 Exercises
Lecture 19	Tuesday 12 October	3.15-5 pm in Euler	Numerical methods
Lecture 20	Wednesday 13 October	1.15-3 pm in Euler	Numerical methods
Lecture	Thursday 14 October	10-11.45 am in MVF33	Spare time
Lecture 21	Friday 15 October	8-9.45 am Digital	Numerical exercises

Exercises. Students should study the solved exercises carefully and then continue to work with the non-solved home exercises. The home exercises are solved during the digital exercise sessions.