ECON4130:   Statistics 2, fall term 2005

Lecturer: Harald Goldstein (Room 1114 ES) Tel: 22 85 51 36

            E-mail: h.e.goldstein@econ.uio.no

Seminarleader: Arvid Raknerud (SSB), Tel: 21 09 44 45

            E-mail: rak@ssb.no

Lectures:	Tuesday 14:15 -16:00,	Auditorium 4, Eilert Sundts hus A-blokka (Start 23. Aug.)
Seminars:	Thursday 18:15 -20:00,	Seminarrom 201, Harriet Holters hus, (8 September – 24 November)
Computing:	Friday 8.15 – 10.00,	PC-rom 035, Harriet Holters hus (week 36 and 37)

Discussions are encouraged in the class, both on Tuesdays, where emphasis is on theory, and in the seminar where exercises, applications and problems are in focus. Do exercises as much as possible. There are only six seminars during the term - which appears to be somewhat too little. It may be questioned if the number of exercises discussed in the seminars really is sufficient. A good idea is, whenever you read a new section in book, check your understanding by trying to solve on your own one or two of the easiest exercises (apart from exercises in the seminars) that you can find which seem relevant to the section.

The class will be divided into two groups for the seminars (group I and group II) preferably of similar size. The seminars for the two groups will go alternating weeks at the same time and place.

The seminars for group I will go weeks 36, 38, 40, 43 (no teaching in week 42), 44, 46. The seminars for group II will go weeks 37, 39, 41, 43, 45, 47.
    (The time and venue for group I in week 43 will be announced later.)

There will be 3 compulsory papers to be handed in which constitutes the portfolio ("mappe") evaluation. Normally all three papers must be submitted and approved in order to obtain an approved ("godkjent") portfolio assessment – which is necessary to be permitted to write the written exam. Students who have obtained an approved portfolio assessment earlier (2003 or 2004) for this course, are not permitted to submit again.

The main focus of the course is theoretical but some computing will be required. Computing will be done in STATA. An introduction to STATA will be arranged in week

36 (for group I) and 37 (for group II). The instruction will be in terms of a tutorial that should be downloaded from the course web page and printed before coming to the pc-room. The students will work on the tutorial by themselves, but the lecturer will be present to help out if someone gets stuck.

A tentative plan for the course follows below. It may be subject to revisions and updating during the term. A more detailed reading list of examples and paragraphs in the book that can be skipped, will be given shortly. For some of the topics in the table below the textbook is too thin and supplementary material will be supplied on the course web page when needed.

Tentative Lecture/Seminar Plan
(May be subject to modifications during the course)

Week	Book sections	Topics	Seminar
34 Aug	2.2 and	Review, discrete/continuous pdf, cdf Uniform, normal, exponential distribution, poisson events.	
35	2.2, 2.3	Gamma distribution, inverse functions, transformed random variables (rv's), simulation of continuous rv's.	
36 Sept.	3.3, 3.4, 4.1, 4.2	Expectation, variance for continuous distr., multiple integrals, joint and marginal distributions, independence **Written paper I announced on Monday 5/9** **Introduction to STATA for group I on Friday, 8.15-10.00 in computer lab (pc-stue 035, HH)**	**Group I:** Supplementary Exercises 1-3 (on the net)
37	3.6.1, 3.5, 4.4 (4.3 read yourself)	(Covariance, correlation in 4.3 read yourself) Conditional distributions and conditional expectations, convolution (in 3.6.1) **Written paper I handed in Monday 12/9. (Eksp.kontoret 12th floor)** **Introduction to STATA for group II on Friday, 8.15-10.00 in computer lab (pc-stue 035, HH)**	**Group II:** Supplementary Exercises 1-3 (on the net)
38	4.4, 4.5	Joint and conditional normality, prediction, moment generating functions (mgf).	**Group I:** Chap 3: 1, 14, 18, 33 Chap 4: 34, 57, 62
39	4.2 (Theorem C), 4.6, chap. 5 + supplementary lecture notes II	Taylor approximation, limit theorems, Tsjebysjeff's inequality, weak law of large numbers	**Group II:** Chap 3: 1, 14, 18, 33 Chap 4: 34, 57, 62

40 Oct	(Read 8.1-8.3 yourself) 8.4, 8.5	Slutsky's lemma. Estimation: Moment method (MME), and maximum likelihood method (MLE)	**Group I:** To be announced
41	8.5, 8.6, 8.8	More on MLE, Efficiency, Cramer-Rao bounds, Fisher information, parametric bootstrap • **Written paper II announced on Monday 10/10**	**Group II:** To be announced
42	---------	NO TEACHING	-------------
43	Lecture notes to Rice chapter 8	Random matrices, Multivariate normal distribution, asymptotic covariance matrix for MLE estimators (multi parameter case) • **Written paper II handed in Monday 24/10 (Eksp.kontoret 12th floor)**	**Group I and II:** To be announced. (Time and venue for group I this week well be announced in time)
44	"Lecture notes to Rice chapter 8" Rice 3.3, 8.2	Multiparameter case continued. Multinomial models. • **Written paper III announced on Monday 31/10**	**Group I:** To be announced
45	Rice 9.5, 9.6 (Read 9.1, 9.2, 9.4 yourself)	Likelihood ratio testing • **Written paper III handed in Monday 7/11 (Eksp.kontoret 12th floor)**	**Group II:** To be announced
46	"Lecture Note on Logistic Regression"	Logistic regression	**Group I:** To be announced
47		Open	**Group II:** To be announced