

Department of Economics
17 January 2005
A. Strøm, room 1119, ES
A. Seierstad, room 1130, ES

ECON3120/4120 Mathematics 2, spring 2005

Lecture schedule (Note: Changes may occur)

Lectures:

Monday 14.15—16.00 in auditorium 2, ES (ES = Eilert Sundt's house).

Thursday 12.15—13.00 in auditorium 2, ES.

First lecture on Monday 17 January.

Seminars (problem sessions):

Wednesday 10.15—12.00, room 2, GS. Seminar leader Magnus Andresen.

Friday 12.15—14.00, room 101, HH. Seminar leader Maria Shikalova.

GS = Georg Sverdrup's house (University library), HH = Harriet Holter's house ("C-building").

First seminars during week 5 (31 January—4 February).

Curriculum:

EMEA: K. Sydsæter and P. Hammond: **Essential Mathematics for Economic Analysis**, FT Prentice Hall, 2002. The entire book, except Sections 10.5—10.7, 14.7, 14.8, and 16.9.

The curriculum listed above includes the curriculum of the mathematics part of the course ECON2200 Mathematics I/Micro I.

The final **exam** is scheduled for Monday 30 May, 14.30—17.30 (but this may be changed).

Note! In order to be allowed to sit for the exam, you must complete two compulsory term papers (problem sets) satisfactorily.

- | | |
|----------|--|
| Mon 17.1 | Brief review of things that you ought to know from before. Powers and exponential functions. (EMEA 4.8—4.9) |
| Thu 20.1 | Exponential and logarithmic functions. (EMEA 4.9—4.10, 6.10—6.11) |
| Mon 24.1 | Limits and continuous functions. (EMEA 7.7—7.8) |
| Thu 27.1 | Compound interest and present value. The intermediate value theorem. Inverse functions. (EMEA 7.9, 10.1—10.3, 5.3) |
| Mon 31.1 | Inverse functions. Indefinite expressions. (EMEA 5.3, 5.6, 7.11) |
| Thu 3.2 | Linear and quadratic approximation. Taylor's formula. (EMEA 7.3—7.5) |
| Mon 7.2 | Integration. (EMEA 9.1—9.4) |
| Thu 10.2 | Methods of integration. (EMEA 9.5—9.6) |

Mon 14.2	Improper integrals. A glimpse at differential equations. (EMEA 9.7—9.8)
Thu 17.2	Vectors. Scalar products. Summation notation. (EMEA 15.7—15.8, 3.1—3.3)
Mon 21.2	Matrices. (EMEA 15.1—15.5)
Thu 24.2	Gaussian elimination. Determinants. (EMEA 15.6, 16.1—16.3).
Mon 28.2	Determinants. (EMEA 16.4—16.5)
Thu 3.3	Inverse matrices. Cramer’s rule. (EMEA 16.6—16.8)
Mon 7.3	Functions of several variables. Partial derivatives. (EMEA I 11.1—11.7)
Thu 10.3	Chain rule with several variables. (EMEA I 12.1—12.2)
Mon 14.3	Homogeneous functions. (EMEA 12.5—12.6)
Thu 17.3	Derivatives of implicit functions. Slope of level curves. Derivatives of inverse functions. (EMEA I 7.1—7.2, 12.3) Term paper 1 is announced.
Week 12 and 13	Easter and “reading week”—no lectures or seminars. (21 March—1 April)
Mon 4.4	Straight lines and planes. Tangent planes. Differentials. (EMEA 15.9, 12.7—12.8)
Wed 6.4	Deadline for term paper 1.
Thu 7.4	Differentiation in equation systems. (EMEA 12.9—12.10)
Mon 11.4	Maxima and minima. (EMEA 8.1—8.5 (brief review), 13.1—13.5)
Thu 14.4	Maxima and minima. Constrained maxima and minima. (EMEA 14.1—14.2, 14.5—14.6)
Mon 18.4	Constrained maxima and minima. (EMEA 14.5—14.6) Term paper 2 is announced.
Thu 21.4	Constrained maxima and minima. The envelope theorem. (EMEA 14.5—14.6, 13.6)
Week 17	No lectures or seminars, but the deadline for term paper 2 is Thursday 28 April.
Mon 2.5	Elasticities. Finding elasticities of implicit functions. (EMEA 7.6, 11.8, 12.4)
Thu 5.5	No lecture (Ascension Day).
Mon 9.5	Final review and summing up.
Thu 12.5	Kept in reserve, just in case we need another day.

Keep an eye on the **ECON4120** homepage!