Department of Economics
August 2008
A. Strøm, room 1119, ES

ECON3120/4120 Mathematics 2, autumn 2008

Lecture schedule (Note: Changes may be made)

Lectures:
Wednesday 10.15—12.00, auditorium 2, Eilert Sundt's House
Friday   10.15—12.00, auditorium 2, Eilert Sundt's House

Seminars (problem sessions):
Monday   10.15—12.00, seminar room 101, Harriet Holter's House
Thursday 10.15—12.00, seminar room 201, Harriet Holter's House

The seminars start in week 36 (1.9—4.9)

Curriculum:

EMEA: K. Sydsæter and P. Hammond: **Essential Mathematics for Economic Analysis, 3rd ed.,**
FT Prentice Hall, 2008. The entire book, except Sections 10.5—10.8, Section 16.9, and Chapter 17.

(You can also use the second edition from 2006: The entire book, except Sections 10.5—10.7, Section
16.9, and Chapter 17.   But then you will also need to look at Sections 5.1—5.4 of **FMEA:** Knut
Sydsæter, Peter Hammond, Atle Seierstad, and Arne Strøm: **Further Mathematics for Economic
Analysis,** FT Prentice Hall, 2nd edition 2008 or 1st edition 2005.)

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 8 December, 09:00—12:00.

Wed 20.8	Exponential and logarithmic functions. (EMEA 4.9—4.10, 6.10—6.11)
Fri 21.8	Exponential and logarithmic functions. Indeterminate forms. Compound interest and present values. (EMEA 6.10—6.11, 7.12, 10.1—10.3)
Wed 27.8	Chain rules. Implicit differentiation. Slopes of level curves. Differentials. (EMEA 7.1—7.4, 12.1—12.3)
Fri 29.8	Differentials. Differentiation in equation systems. Limits and continuous functions. (EMEA 12.8—12.11, 7.8—7.9, 7.11)
Wed 3.9	The intermediate value theorem. Integration. (EMEA 7.10, 9.1—9.4)
Fri 5.9	Integration and methods of integration. (EMEA 9.4—9.6)
Wed 10.9	Methods of integration. (EMEA 9.5—9.6)
Fri 12.9	Extensions of the integral concept. (EMEA 9.7)
Wed 17.9	First-order differential equations. Separable differential equations. (EMEA 9.8—9.9)
Fri 19.9	Separable and linear differential equations. (EMEA 9.9)

Wed 24.9   Linear differential equations. (EMEA 9.9)

Fri   26.9   Vectors. Scalar products. Straight lines and planes. (EMEA 15.7—15.9)

Week 40   "Reading week". No lectures or seminars in this course during the period 29.9—3.10.

Wed   8.10   Matrices. (EMEA 15.1—15.4)

Fri   10.10   Matrices. Gaussian elimination. (EMEA 15.5—15.6)

Wed 15.10   Determinants. (EMEA 16.1—16.3)

Fri   17.10   Determinants. Inverse matrices. (EMEA 16.4—16.6)

Wed 22.10   Inverse matrices. Cramer's rule. (EMEA 16.7—16.8)

Fri   24.10   Homogeneous and homothetic functions. (EMEA 12.6—12.7)

Wed 29.10   Maxima and minima. Review. (EMEA 8.1—8.7, 13.1—13.4)

Fri   31.10   Maxima and minima. (EMEA 13.5—13.6)

Wed   5.11   Constrained maxima and minima. (EMEA 14.1—14.6)

Fri   7.11   Envelope theorem. Nonlinear programming. (EMEA 13.7, 14.7—14.8)

Wed 12.11   Nonlinear programming. (EMEA 14.8—14.9)

Fri   14.11   Linear and quadratic approximation. Taylor's formula.
                    (EMEA 7.4—7.6 and handouts.)

Wed 19.11   Elasticities. Elasticity of substitution. Finding elasticities of implicit functions.
                    (EMEA 7.7, 11.8, 12.5, and handouts)

Fri   21.11   Final review and summing up.

Keep an eye on the **ECON4120** home page!