Subject

Mathematics		

ECTS code	**Semester**	Faculty: Finance
	1	Major: Finance and Accounting
		Corporate Finance and Accounting

Faculty:

Lecture: Andrzej Malawski

Classes:

System of studies:

part time, first degree

Subject status	**Pass requirement**	**Number of contact hours**		**ECTS points**
		Lectures	**Classes**	
Group A		18	18	7

Teaching language

English

Subject provisions and objectives (including the expected can-do of students on completion of the course)

At the completion of the course the student should:

1. Be able to understand the basic concepts of higher mathematics as well as to use the formal techniques in this area.
2. Be able to apply the above to economic science and management.
3. Gain experience in practical problem solving by use mathematics.

Teaching curriculum (in case of prescribed subjects, compliance with the standards, maximum 15 topics)

1. Basis of mathematics: logic, sets,relations, functions as relations

2. Algebra: matrices, determinants, systems of simultaneous equations, input-output model

3. Calculus: limits of sequences, limits of a functions, derivative, investigation of a function, integration, functions of several variables

4. Applications to economics and management: marginal concepts, elasticity of a function, least squares method

Class topics (maximum 15 topics)

As above

Introductory topics

After standard school mathematics

Teaching methods

Lecture plus class problem sessions

Basic literature and Rother sources

"Elementary Linear Algebra" S. Venit, W. Bishop

"Calculus" L. D. Hoffman, G. L. Bradley

materials and exercise sheets prepared by teachers

Pass requirements for signature/examination
Assessment of problem sessions: two middle-term tests plus attendance
Assessment of the course: final exam (written form)

Examples of questions for tests and examinations

1. Using the Cramer's rule, solve the system of linear equations:

   $2y + 3z = 0$
   $-3x + 2z = -2$
   $-2x + y = 0$

2. Determine where the function $f(x) = \ln(x^2 + 1)$ is increasing/decreasing and find the relative extrema.

3. Define the Riemannian integral $\int_a^b f(x)dx$ and calculate the area of the region between the curves: $y = x^2 - 9, \ y = 0$.

4. Interpret l dimensional vector space $\mathbf{R}^l$ as a commodity/price space.