Mathematics for Economics I.

Tárgynév:	Mathematics for Economics I.					
Rövid név:	Math.Econ. I.			*Kód:*	GEMAN1013BA	
Angol név:	Mathematics for Economics I.					
Tanszék:	Analízis Tanszék					
Tárgyfelelős:	Varga Péter					
Előtanulmányok:	-			*Kódja:*	-	
Kredit:	6	*Követelmény:*		aláírás és kollokvium		
Heti óraszámok:	*Előadás:*	2	*Gyakorlat:*	2	*Labor:*	-
Oktatási cél:	Introduction to the basic concepts of calculus and their applications. Functions, derivatives, and limits; the definite integral. Introduction to single variable probability. Random variables. Distributions.					
Tárgy tartalom:	1. The notion of sequences and their properties. Operations with sequences. The limit of sequences. 2. The notion of function. The limit and continuity of function. Some properties of continuous functions. 3. The differentiable function, differential quotient and the rules of differentiation. The mean value theorem of differential calculus. 4. The higher order derivatives. Maximum and minimum values of a function. Graphing problems. L'Hospital's rule. 5. Function of more variables. The partial derivatives. Maxima and minima of functions of two variables. 6. The Riemann integral. The properties of the definite integrals. 7. The indefinite integral. Integration methods. Improper integrals. Applications of the definite integral. 8. Double integrals. 9. Numerical series, power series. 10. Boole's algebra. Operations with events. The notion probability. Axioms of probability. The classical determination of probability. 11. Conditional probability. The independence of events and samplings. 12. Random variable, distribution, distribution function, density function, expectations and variances. 13. Special discrete distributions: Binomial-, Hyper geometric- and Poisson's distributions. 14. Continuous random variables. Continuous distributions: Uniform, normal and exponential distributions.					

Irodalom:	Mike Rosser - Basic Mathematics for Economists, Carl P. Simon, Lawrence E. Blume - Mathematics for Economists, C. M. Grinstead-J. L. Snell: Introduction to Probability, AMS 2006. S. Ghahramani: Fundamentals of Probability, Prentice Hall, Upper Saddle River, NJ 2000.

Jellemző oktatási módok:	
Oktatási nyelv:	Angol (English)
Előadás:	Classroom presentation
Gyakorlat:	Classroom presentation
Labor:	-
Évközi feladatok, zárthelyik:	Two tests.
Lezárási feltételek:	Passed tests (or make up ones). Passed comprehesive test in the exam period.