

Przedmiot: Fundamentals of Quantitative Methods

Forma zajęć: ćwiczenia	Semestr: 1	Rok: 1	Wymiar godzin: 25	Punkty ECTS:		
Forma zaliczenia: zaliczenie na ocenę		Typ przedmiotu: obowiązkowy		Język nauczania: angielski		
Kierunek: Międzynarodowe Stosunki Gospodarcze		Tryb: stacjonarne		Rodzaj: licencjackie		
Specjalność: International business						
Katedra: Prognoz i Analiz Gospodarczych						
Stopień naukowy wykładowcy: dr	Imię i nazwisko wykładowcy: Wioletta Wołńska, Aleksandra Szpulak					

Wymagania wstępne (przedmioty wprowadzające):

Basic mathematics skills on the Secondary education level

Program przedmiotu:

- Linear algebra: operations with matrix, the determinant of matrix, the inverse of a square matrix, use of matrix inversion to solve linear equations, Cramer's rule, a macroeconomic application of matrix.
- Series of numbers. Limit of the sequence and limit of the function.
- Functions on one variable (limits, derivatives, increase and decrease, relative maxima and minima, , the second derivative).
- Functions of two variables. Economic applications of functions and derivatives: marginal cost, demand, profit maximisation, the elasticity of demand.
- The indefinite integral.
- The definite integral. Economic applications of integrals: deriving the total cost function from the marginal cost function, consumers' surplus, producers' surplus, present value of a continuos stream of incom.
- Numerical descriptive measures (measures of central tendency, measures of variability, measures of skewness and kurtosis)
- Correlation analysis (Pearson correlation coefficient and Spearman's rank coefficient)

Metody dydaktyczne:

Practical methods- solving lists of task, case study, self-study

Cele przedmiotu:

- to acquire the students' knowledge in the field of mathematics,
- to develop the students' ability to apply the knowledge of mathematics and make them ready to analyze and solve real economic problems,
- to improve students knowledge on basic statistics measures

Warunki zaliczenia:

2 written tests - in the middle and the end of workshops

Literatura podstawowa (do 4 pozycji):

- Z. Michna, Mathematics, Wrocław, 2008,
G. Renshaw, Maths for economics, Oxford, 2005
J.T.McClave, P.G.Bensosn, T. Sincich, Statistics for business and economics, Prentice-Hall, 2001

Literatura uzupełniająca (do 4 pozycji):

- C. P. Simon, L. Blume, Mathematics for Economists, New York, London, WW Norton and company, 1994