

Training program of a post-graduate course „Analysis of agricultural supply, cost, and producer income” (Prof. Michael Grings) and „Statistics and Econometrics in R” (Dr. Thomas Zelinsky) at the Institute for Economy, Finance and Statistics of the Academy of Sciences of Moldova, Chisinau, Republic of Moldova, August 01 – 05, 2011

Time	Monday	Tuesday	Wednesday	Thursday	Friday
08.30 – 10.15	Introduction; Problems and research questions (prof. Grings)	Exercises; Analysis of agricultural policy measures using quasi-rent functions (prof. Grings)	Exercises; Representation of technologies by cost functions; duality concepts (prof. Grings)	Exercises; Elasticities of substitution and size; substitution and output effects of factor demand (prof. Grings)	Test results and solutions of test problems (prof. Grings)
10.15 – 10.30	Coffee break (covered by IEFS)				
10.30 – 12.00	Basic theoretical concepts for the analysis of supply and factor demand on competitive markets (prof. Grings)	Example of an analysis for Germany (prof. Grings)	Variable and total cost functions; properties of variable cost functions (prof. Grings)	Test (prof. Grings)	Evaluation of seminar (prof. Grings)
12.00 – 13.00	Lunch (covered by participants)				
13.00 – 14.30	Duality concepts for the analysis of supply and factor demand (prof. Grings)	<ul style="list-style-type: none"> • <i>Introduction to R</i> <ul style="list-style-type: none"> ○ Installing R ○ Basic commands in R, importing data files from Excel ○ Creating objects (vectors, sequences, matrixes.) • <i>Descriptive statistics</i> <ul style="list-style-type: none"> ○ Measures of central tendency and variability ○ Basic graphical outputs (Dr. Zelinsky)	Long-run and short-run cost functions; Le Chatelier principle; Capacity and optimal plant size (prof. Grings)	<ul style="list-style-type: none"> • <i>Models for binary choice</i> <ul style="list-style-type: none"> ○ Estimation of logit/probit models ○ Diagnostics of binary choice models • <i>Econometric analysis of panel data</i> <ul style="list-style-type: none"> ○ One-way error component regression model ○ Two-way error component regression model ○ Test for poolability ○ Test for individual and time effects ○ Hausman test (Dr. Zelinsky)	<ul style="list-style-type: none"> • <i>Introduction to spatial statistics</i> <ul style="list-style-type: none"> ○ Spatial dependence: polygon and point data objects ○ Graphical presentation of spatial data (creating maps in R) ○ Importing Google maps to R, drawing on Google maps (Dr. Zelinsky)

14.30 – 14.45	Coffee break (covered by IEFS)				
14.45 – 16.30	Derivation and properties of profit functions and quasi-rent (producer surplus) functions (prof. Grings)	<ul style="list-style-type: none"> • <i>Statistical hypotheses testing</i> (parametric, nonparametric tests) <ul style="list-style-type: none"> ○ One-sample tests ○ Two-sample tests ○ k-sample tests ○ Normality tests • <i>Correlation</i> <ul style="list-style-type: none"> ○ Parametric, nonparametric measures of correlation ○ Correlation tests • <i>Regression</i> <ul style="list-style-type: none"> ○ Classical multiple linear regression model (Dr. Zelinsky)	<ul style="list-style-type: none"> • <i>Verifying econometric model</i> <ul style="list-style-type: none"> ○ Testing for heteroscedasticity ○ Testing for autocorrelation ○ Testing for multicollinearity ○ Graphical diagnostics of model • <i>Transformations of model</i> <ul style="list-style-type: none"> ○ Log transformation ○ Dif transformation (Dr. Zelinsky)	<ul style="list-style-type: none"> • <i>Basic multivariate statistical methods</i> <ul style="list-style-type: none"> ○ Principal components analysis ○ Hierarchical clustering ○ Nonhierarchical clustering (Dr. Zelinsky)	Leisure