SYLLABUS
Introduction to Econometrics
Academic year 2025-2026

1. Information regarding the program

1.1. Higher education institution	Universitatea Babeş Bolyai
1.2. Faculty	Business
1.3. Department	Business
1.4. Field of study	Business Administration
1.5. Study cycle	Bachelor
1.6. Study programme/Qualification	Business Administration/Bachelor in Economic Studies
1.7. Form of education	Full time

2. Information regarding the discipline

2.1. Name of the discipline	Introduction to Econometrics					Discipline code	ILE0048
2.2. Course coordinator	Assoc.prof. Gabriela PETRUŞEL, PhD						
2.3. Seminar coordinator	Assoc.prof. Gabriela PETRUŞEL, PhD						
2.4. Year of study	2	2.5. Semester	1	2.6. Type of evaluation	E	2.7. Discipline regime	compulsory

3. Total estimated time (hours/semester of didactic activities)

3.1. Hours per week	4	of which: 3.2 course	2	3.3 seminar/laboratory	2
3.4. Total hours in the curriculum	56	of which: 3.5 course	28	3.6 seminar/laboratory	28
Time allotment for individual study (ID) and self-study activities (SA)					**hours**
Learning using manual, course support, bibliography, course notes (SA)					14
Additional documentation (in libraries, on electronic platforms, field documentation)					14
Preparation for seminars/labs, homework, papers, portfolios and essays					28
Tutorship					2
Evaluations					2
Other activities:					9
3.7. Total individual study hours					**69**
3.8. Total hours per semester					**125**
3.9. Number of ECTS credits					**5**

4. Prerequisites (if necessary)

4.1. curriculum	
4.2. competencies	

5. Conditions (if necessary)

5.1. for the course	classroom with computer and projector;
5.2. for the seminar /lab activities	classroom with computer and projector;

6.1. Specific competencies acquired

Professional/essential competencies	C1. Gathering, processing and analysing data regarding the interaction between a company/an organisation and the external environment C1.3. Applying the appropriate tools for analyzing the relationship of influence exerted by the external environment on the enterprise/organization C5. Using databases specific to business management C5.4. Critical-constructive evaluation of data processing and analysis tools
Transversal competencies	CT1. Implementing ethical principles, norms and values within one's own rigorous, efficient, and responsible strategy of work

6.2. Learning outcomes

Knowledge	The student has knowledge of accounting, processing, and analysis of economic and financial information required for an effective organisation and management of businesses. • Knows methods of collecting data and making statistics for testing and evaluation to generate statements and pattern predictions, in order to discover useful information in the decision-making process. • Has knowledge of using software tools for creating and editing tabular data to perform mathematical calculations, organize data and information, create data-driven charts, and retrieve them.
Skills	The student has the necessary skills to use methods and techniques specific to the financial and accounting management of an enterprise as a whole, specialised software included. • Use dedicated software for data analysis, including statistics, spreadsheets and databases, explore the possibilities to prepare reports to administrators, superiors or customers.
Responsibility and autonomy:	

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	• Learning the techniques of statistical analysis and forecasting of economic phenomena.
7.2 Specific objective of the discipline	• Understanding the concepts of estimator and statistical hypothesis; • Learning techniques for analyzing the relationship between statistical variables; • Learning techniques for analysis of time series;

8. Content

8.1 Course	Teaching methods	Remarks
Review of some descriptive statistic concepts	interactive discussion	• Organizing data • Describing data
Sampling distribution	interactive discussion	• Sampling distribution with replacement • Sampling distribution without replacement • Standard error of the sample mean • Standard error of the sample proportion
Estimation I	interactive discussion	• Point estimators • Confidence intervals for the population mean • Confidence intervals for the proportion
Estimation II	interactive discussion	• Confidence intervals for two population mean • Confidence intervals for two population proportion • Confidence intervals for median
Hypothesis testing I	interactive discussion	• Single population average • Proportion
Hypothesis testing II	interactive discussion	• Two population average • Two population proportion
Hypothesis testing III	interactive discussion	Chi-squared test
Analysis of variance (ANOVA)	interactive discussion	• Single factor analysis • Two factor analysis
Relationships between variables I	interactive discussion	Simple linear regression
Relationships between variables II	interactive discussion	Multiple linear regression
Time series analysis I	interactive discussion	• Components of time series • Decomposition of time series • Measurement of trend
Time series analysis II	interactive discussion	• Measurement of seasonal variation • Measurement of cyclical variation
Index numbers	interactive discussion	• Composite price indexes • Quantity indexes

Review of some descriptive statistic concepts	interactive discussion	• Organizing data • Describing data

Bibliography:
1. Carter Hill, R., Griffiths, W.E., Lim, G.C., Principles of Econometrics, 5th Edition, 2018, Wiley
2. Briand, G., Carter Hill, R., Using Excel for Principles of Econometrics, 5th Edition, 2018, E-book.
3. Brandimarte P., Quantitative Methods – an introduction for Business Management, Wiley&Sons, 2011
4. Berenson M.L., Levine D.M., Krehbiel T.C., Basic Business Statistics. Concepts and applications, 11th edition, Pearson Education, 2009;
5. Anderson D., Sweeney D., Williams T., Quantitative Methods for Business, Thomas Learning, London, 2001. (biblioteca facultăţii)
6. Fleming M.C., Nellis J.G., Principles of Applied Statistics, Second Edition, Thomas Learning, 2000. (biblioteca facultăţii)

8.2 Seminar / laboratory	Metode de predare	Observaţii
Review of some descriptive statistic concepts	interactive discussion	• Organizing data • Describing data
Sampling distribution	interactive discussion	• Sampling distribution with replacement • Sampling distribution without replacement • Standard error of the sample mean • Standard error of the sample proportion
Estimation I	interactive discussion	• Point estimators • Confidence intervals for the population mean • Confidence intervals for the proportion
Estimation II	interactive discussion	• Confidence intervals for two population mean • Confidence intervals for two population proportion • Confidence intervals for median
Hypothesis testing I	interactive discussion	• Single population average • Proportion
Hypothesis testing II	interactive discussion	• Two population average • Two population proportion
Hypothesis testing III	interactive discussion	Chi-squared test
Analysis of variance (ANOVA)	interactive discussion	• Single factor analysis • Two factor analysis
Relationships between variables I	interactive discussion	Simple linear regression
Relationships between variables II	interactive discussion	Multiple linear regression
Time series analysis I	interactive discussion	• Components of time series • Decomposition of time series • Measurement of trend
Time series analysis II	interactive discussion	• Measurement of seasonal variation • Measurement of cyclical variation
Index numbers	interactive discussion	• Composite price indexes • Quantity indexes

Revision	interactive discussion	• Organizing data • Describing data

Bibliography:
1. Carter Hill, R., Griffiths, W.E., Lim, G.C., Principles of Econometrics, 5th Edition, 2018, Wiley
2. Briand, G., Carter Hill, R., Using Excel for Principles of Econometrics, 5th Edition, 2018, E-book.
3. Brandimarte P., Quantitative Methods – an introduction for Business Management, Wiley&Sons, 2011
4. Berenson M.L., Levine D.M., Krehbiel T.C., Basic Business Statistics. Concepts and applications, 11th edition, Pearson Education, 2009;
5. Anderson D., Sweeney D., Williams T., Quantitative Methods for Business, Thomas Learning, London, 2001. (biblioteca facultăţii)
6. Fleming M.C., Nellis J.G., Principles of Applied Statistics, Second Edition, Thomas Learning, 2000. (biblioteca facultăţii)

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- The course content is correspondence with what is done in other universities in the country and abroad.
- To adapt to the market demands of the contents meetings were held with representatives of the business community.

10. Evaluation

- **The same evaluation criteria are maintained for all exams sessions. The components of the evaluation process carried out during the semester cannot be recovered/redone in the examination sessions.**
- **To be able to accumulate the points obtained during the semester, it is mandatory to obtain a minimum of 5 (five) in the final exam (written/oral).**

Activity type	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Percentage of final grade
10.4 Course	• correct logical and coherent application of the concepts learned • logical and accurate explanation and interpretation of the results;	final exam (in the exams session)	50%
10.5 Seminar/laboratory	• the ability to apply concepts learned in practice • correct logical and coherent application of the concepts learned • economic explanation of the results; • interest in the individual preparation throughout the whole semester	applicative activities (projects, essays, reports -during the semester)	20%
		control papers (during the semester)	20%
		the active participation in seminars	10%
10.6 Minimum standard of performance			
For the minimum grade (5), students must • Know the fundamental concepts and to be able to apply them. • To give an interpretation of the results.			

11. Labels ODD (Sustainable Development Goals)[1]

Not Applicable

Date:	Signature of course coordinator	Signature of seminar coordinator
28.03.2025	Assoc.prof Gabriela Petruşel, PhD	Assoc.prof Gabriela Petruşel, PhD

Date of approval:	Signature of the head of department
10.04.2025	Ioan Cristian CHIFU, PhD

[1] Keep only the labels that, according to the *Procedure for applying ODD labels in the academic process*, suit the discipline and delete the others, including the general one for *Sustainable Development* – if not applicable. If no label describes the discipline, delete them all and write „*Not applicable*.".