**Course Syllabus**

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| Title of the course | **Econometrics** |
| Title of the Academic Programme  | Undergraduate program 38.03.02. Management |
| Type of the course  | Compulsory |
| Prerequisites | * Introductory Statistics
* Calculus
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| ECTS workload | 6 |
| Total indicative study hours | Directed Study | Self-directed study | Total |
| 90 | 138 | 228 |
| Course Overview | The course teaches the regression methods for analyzing observational, experimental and quasi-experimental data in economics and management. The goal is to help students develop a solid theoretical background in introductory level econometrics, the ability to implement the techniques and to critically assess empirical studies in economics, marketing and management science. The emphasis is placed on causal inference and methods of coping with endogenous regressors. Students will learn how to use R for econometric modeling thanks to the fact that 60% of the course is spent on in-class R tutorials involving analysis of real-world datasets, as well as Monte-Carlo simulations. |
| Intended Learning Outcomes (ILO) | Upon completion of the course students will be able to (competency code is given in brackets):* Choose methods adequately corresponding to the objectives of a research project (УК-3)
* Collect, store, process and analyze data according to high standards (УК-4)
* Conduct empirical research in economics and management using modern analytic software tools (ОПК-1)
* Develop and apply new research methods (ОПК-2)
* Solve economic and managerial problems using best practices of data analysis using modern computational tools (ПК 2)
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| Teaching and Learning Methods | * Every week a 2-4 hour tutorial is given to practice real-world data analysis skills
* 100% of time during tutorials is allocated to practicing R programming skills
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| Indicative Course Content  | Economic questions and data.Review of probability and statisticsLinear regression with one regressor: estimation and fit measuresTutorial: Simple linear regressionLinear regression with one regressor: confidence intervals and hypotheses testingLinear regression with multiple regressors: estimation and fit measuresLinear regression with multiple regressors: confidence intervals and hypotheses testingNonlinear regression functionsAssessing studies based on multiple regressionRegression with panel dataRegression with binary dependent variableInstrumental variablesExperiment and Quasi-ExperimentsTime series analysis and forecasting |
| Indicative Assessment Methods and Strategy  | **Assessment methods:****In-class Tests:** at least3 in-class tests during the course. The average is rounded to the nearest integer from 0 to 10.**DataCamp Forecasting using R course (DCFR):** all students should take this course at home in June. The grade is proportional to the DataCamp tasks completion rate averaged out across the course’s modules.**Exam:** Final test (duration: 75-minutes) covering all topics. Involves answering multiple choice and free response questions, some of which require doing R calculations. **Assessment strategy:****Cumulative grade (before exam)=** 0.7\*Tests+0.3\*DCFR **Final grade**=0.7\*Cumulative grade+0.3\*Exam**All grades in the formulas are integer numbers from 0 to 10. Standard rounding rules are used.** |
| Readings / Indicative Learning Resources | **Mandatory** 1. Hill, R. C. Principles of econometrics: International student version / R. C. Hill, W.E. Griffiths, G.C. Lim . – 4 th ed . – Hoboken : Wiley, 2013 . – 758 p.

**Optional**1. J.H. Stock and M.W. Watson, Introduction to Econometrics (third edition), Addison-Wesley, 2015.
2. Wooldridge J. M. Introductory econometrics: A modern approach. – Nelson Education, 2015.
3. R for Marketing Research and Analytics/ Chris Chapman, Elea McDonnell Feit. Springer-Verlag, Switzerland, 2015.
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| Course Instructor | Evgeny A. Antipov, PhD, Associate Professor, Department of Management,Elena B. Pokryshevskaya, PhD, Associate Professor, Department of Management |