**Course Descriptor**

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| Title of the course | | **Time Series Econometrics** | | |
| Title of the Academic Programme | | MA in Applied Economics and Mathematical Methods | | |
| Type of the course | | Elective, available to foreign students | | |
| Prerequisites | | Econometrics | | |
| ECTS workload | | 4 | | |
| Total indicative study hours | | Directed Study | Self-directed study | Total |
| 44 | 108 | 152 |
| Course Overview | | The purpose of the discipline is understanding of time series analysis specific. The focus of course is multidimensional case. Frequency and Bayesian approaches should be understood by students. | | |
| Intended Learning Outcomes (ILO) | | Known main conventional techniques of time series analysis.  Be able to construct, estimate and test conventional time series econometric model. | | |
| Teaching and Learning Methods | | The course consists of lectures (20 hours) and tutorials (24 hours). The tutorials involve solving econometric problems with software packages | | |
| Content and Structure of the Course | | | | |
| **№** | **Topic / Course Chapter** | | | |
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| 1 | Brief description of 1D case (definitions, ARMA) | | | |
| 2 | Unit root, cointegration, VAR, VECM | | | |
| 3 | SVAR, FAVAR | | | |
| 4 | BVAR | | | |
| 5 | Kalman filter, TVP-VAR, and some additional filters | | | |
| Indicative Assessment Methods and Strategy | | Students’ progress will be measured by [1] in-class tests (25% of the final grade), [2] group task (15%), [3] homework (25%), and [4] 90-minute written final exam (35%). | | |
| Readings / Indicative Learning Resources | | Mandatory:Brockwell P.J., Davis R.A. Introduction to Time Series and Forecasting [Electronic resource]/ Brockwell P.J., Davis R.A. – Springer International Publishing, 2016. – (Springer Texts in Statistics) – Authorized access: [https://link.springer.com/book/10.1007/978-3-319-29854-2#authorsandaffiliationsbook](https://link.springer.com/book/10.1007/978-3-319-29854-2%23authorsandaffiliationsbook%20) (Springer eBooks) Optional:  Neusser K. Time Series Econometrics [Electronic resource]/ Neusser K. – Springer International Publishing, 2016. – (Springer Texts in Business and Economics) – Authorized access: [https://link.springer.com/book/10.1007/978-3-319-32862-1#about](https://link.springer.com/book/10.1007/978-3-319-32862-1%23about) (Springer eBooks) | | |
| Academic Support for the Course | | Academic support for the course is provided via LMS, where students can find: guidelines and recommendations for doing the course; guidelines and recommendations for self-study; samples of assessment materials | | |
| Facilities, Equipment and Software | | Eviews, Matlab | | |
| Course Instructor | | Sergey Ivashchenko | | |