**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 |