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| *Name of Course* | **DXV\_PUEC Public Economics** |
| *Lecturer* | doc. JUDr. Ivan Malý, CSc., prof. Ing. Juraj Nemec, CSc., doc. Mgr. Jiří Špalek, Ph.D. |
| *ECTS* | 12 credits |
| *Extent and Intensity* | 24 teaching hours, 45 minutes each (4 lectures á 6 hours) |
| *Schedule* | Thu 28. 2. 14:00--17:00, Thu 11. 4. 9:00--13:00 |
| *Course objectives* | At the end of the course students understand deeper a wide scale of approaches to key Public Economics concepts and questions. The students must fully and in depth understand public economics issues connected with the topic and objectives of their doctoral theses. |
| *Prerequisites* | Elementary knowledge of the principles of the economic theory. |
| *Syllabus* | * 1. Introduction. Compulsion and non-profitness. Economic role of the Government. Governance. Bureaucracy. Evaluation of all these core aspects from the point of view of different economic theories.
* 2. Efficiency in the Public Sector. Public private mix.
* 3. Redistribution systems theory - prospective development of the Game theory.
* 4. Second best - concept, approaches. Setting goals and preferences. Public Interest.
* 5. Modern approaches to the public sector.
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| *Literature* | * BROWN, C.V., JACKSON, P.M.: Public Sector Economics. 4th ed., Basil Blackwell, 1990, ISBN 0-631-16207-0
* BUCHANAN, J.M.: Public Finance in Democratic Process. The University of North Carolina Press, 1967, 1987.
* ROTHBARD, Murray N.: Power and Market: Government and the Economy. Sheed Andrews and McMeel; 2nd edition (September 1977). ISBN: 978-0836207514
* VON MISES, L.: Bureaucracy. Libertarian Press. 1996. ISBN 978-0910884341
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| *Teaching methods* | Active participation is required: class discussions, argumentations exercises,extensive readings, e.t.c. Topics for essays are selected according their relevance from the point of view of progranmme and the contents of PhD theses. |
| *Assessment methods* | Written examination - essay. A set of self made abstracts from study literature is required. |

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| *Name of Course* | **DXE\_EMT2 Econometrics 2** |
| *Lecturer* | Ing. Daniel Němec. Ph.D. |
| *ECTS* | 12 credits |
| *Extent and Intensity* | 24 teaching hours, 45 minutes each (6 lectures á 4 hours) |
| *Schedule* | Will be precised |
| *Course objectives* | On the basis of the introduction to econometrics as covered in the course Econometrics, advanced econometric topics will be the subject of this course. Besides conceptual topics such as maximum likelihood estimation, econometric methods for empirical analysis of time series data will be the main content; in addition, models for analyzing limited dependent variables and for analyzing panel data will be covered. The course is designed to provide students with a good knowledge of basic and advanced econometric tools so that:- they will be able to apply these tools to modeling, estimation, inference, and forecasting in the context of economic problems;- they have experience in applying the econometric software Gretl for analyzing data;- they can evaluate critically the results from others who use econometric methods and tools;- they have a basis for further studies of econometric literature. |
| *Prerequisites* | Participants should be familiar with the following topics:Linear algebra – linear equations, matrices, vectors (basic operations and properties).Descriptive statistics – measures of central tendency, measures of dispersion, measures of association, histogram, frequency tables, scatterplot, quantiles.Theory of probability – probability and its properties, random variables and distribution functions in one and several dimensions, moments, convergence of random variables, limit theorems, law of large numbers.Mathematical statistics – point estimation, confidence intervals for parameters of normal distribution, hypothesis testing, p-value, significance level.Basic econometrics - ordinary least squares method, linear regression, classical assumptions and their violations.These topics correspond to the chapters the appendices of Verbeek’s book, in particular, to the chapters 1-5 and sections: A1, A2, A3, A4, A6, A8, B1, B2, B3 (excluding Jensen's inequality), B4, B5, B6 and B7 (excluding some properties of the chi-squared distribution and the F-distribution). |
| *Syllabus* | 1. Maximum likelihood Estimation and Specification Tests (Verbeek, Ch.6) - The concept of maximum likelihood; - Specification tests; - Tests in the normal linear regression model; - Quasi-maximum likelihood and moment conditions tests.2. Models with Limited Dependent Variables (Verbeek, Ch.7) - Binary choice models; - Multiresponse models; - Tobit models. 3. Univariate time series models (Verbeek, Ch.8) - ARMA processes; - Stationarity and unit roots; - Testing for unit roots; - Estimation of ARMA models; - Choosing a model. 4. Multivariate time series models, part 1 (Verbeek, Ch.9) - Predicting with ARMA models; - Autoregressive conditional heteroskedasticity; - Dynamic models with stationary variables; - Models with nonstationary variables.5. Multivariate time series models, part 2 (Verbeek, Ch.9) - Vector autoregressive models; - Cointegration: the multivariate case;6. Models Based on Panel Data (Verbeek, Ch.10) - Static and dynamic linear models; - Nonstationarity, unit roots, and cointegration; - Models with limited dependent variables. |
| *Literature* | VERBEEK, Marno. *A guide to modern econometrics*. 3rd ed. Chichester: John Wiley & Sons, 2008. xv, 472. ISBN 9780470517697. |
| *Teaching methods* | Class discussion, homework including computer exercises using Gretl, and presentation of homework by participants; course language is English. |
| *Assessment methods* | For grading, written homework, presentation of homework in class, and a final written exam will be taken into account. The weight for homework will be 40 %, that of the written final exam 60 %. Presentation of homework in class means that students must be prepared to be called at random to the blackboard. |
| *Additional notes* | The minimum of students for opening the course is 5. |

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| *Name of Course* | **DXF\_OCAK Asset Pricing** |
| *Lecturer* | doc. Ing. Tomáš Výrost, PhD. |
| *ECTS* | 12 credits |
| *Extent and Intensity* | 24 teaching hours, 45 minutes each (6 lectures á 4 hours) |
| *Schedule* | Fri 1. 3. 10:15--14:00 S307, Fri 8. 3. 10:15--14:00 S307, Fri 29. 3. 10:15--14:00 S307, Thu 11. 4. 10:15--14:00 S307, Fri 26. 4. 10:15--14:00 S307 |
| *Course objectives* | The course is only offered to the students of the study fields the course is directly associated with. |
| *Prerequisites* | The use of own personal laptops with a spreadsheet program is strongly encouraged. The use of econometric software is strongly encouraged (for example, GRETL may be freely downloaded from http://gretl.sourceforge.net/, available for Windows/Linux/Mac). The course participants are expected to be familiar with the following topics: – Univariate and multivariate functions. – Unconstrained optimization, constrained optimization using Lagrange multipliers. – Matrix algebra – addition, multiplication, transpose, inversion. – Basic statistics – expected value, variance, covariance. – Basic econometrics – model specification, estimation via OLS, model assumptions. |
| *Syllabus* | Basic concepts in finance and statistics (discounted present value, utility, asset demand, significance tests, linear models, single/multivariate models). - Efficient market hypothesis, predictability of stock returns (definition of EMH, empirical tests of EMH, econometric models for stock return predictability). - CAPM and factor models, performance measures (Capital asset pricing model, systematic risk, performance measures, extensions, Fama-French three-factor model, empirical application and testing). - Stochastic discount factor models, consumption-CAPM (return predictability under C-CAPM, equity premium puzzle, extensions). - Term structure modelling (prices and yields, theories of the term structure, the expectation hypothesis, empirical evidence on the term structure). |
| *Literature* | CUTHBERTSON, Keith and Dirk NITZSCHE. *Quantitative financial economics : stocks, bonds and foreign exchange*. Second edition. Chichester: John Wiley & Sons, 2005. xiv, 720. ISBN 0470091711. |
| *Teaching methods* | Lectures, exercise sessions and home assignment. |
| *Assessment methods* | Graded home assignment (20%), written exam (80%). The home assignment must be handed in prior to taking the written exam. The participants are expected to be ready to present their home assignment during the last session upon request. Grades: 100 - 92 % = A, 91 - 84 % = B, 83 - 76 % = C, 75 - 68 % = D, 67 - 60 % = E, less than 60 % = F. |