SYLLABUS

Subject	Science Category	Faculty	Department
Research Methods	Economics S 004	Faculty of Economics and Business Administration	Center for Economic Expertise

Number of ECTS credits allocated	Student's workload (total)	Contact hours	Individual work
5	135	24	111

Annotation

The course consists of two parts:
Part I: Planning and writing a paper
Part II: Tools for research
 	
Part I: Planning and Writing a paper (12 contact hours)
 	
The aim of this part is to provide an introduction to planning and writing a paper to PhD students who are about to start their research career.
 	
Besides making students aware of the key suggestions for doing research in economics, the course puts an emphasis on practice. With this in mind, the first course unit (Writing a research paper in economics) is structured to cover the basic information and suggestions for research in economics and also gives a chance to practice different steps. Such phases of research as planning a research project and structuring a scientific paper will be covered in terms of common tips and also through practical examples and assignments. Students will learn how to make better-structured and effective academic presentations. Students will refresh their knowledge on writing well and work on improving their writing by analyzing selected papers in economics and their own pieces of writing. The intention is to increase awareness of what good writing entails and achieve better writing through practice in the class and self-study.
 	
Outline:
    1. How to do research (3 hours, Dr Guillermo Hausmann-Guil)
        a. How to get started on research?
        b. Planning a research project.
        c. Writing a research paper.
    2. How to present and to publish? (3 hours, Dr Guillermo Hausmann-Guil)
        a. Publishing a research paper.
        b. How to present a scientific paper?
    3. Academic writing (6 hours, Dr Guillermo Hausmann-Guil)
 	
Learning outcomes: During this course students will learn about the key planning principles of a research project and start planning their own research agenda by adapting the tips. Students will learn how to make their presentations better-structured and effective in terms of conveying results and receiving feedback and become aware of what is good writing in economics. Consequently this course will improve students' writing and presentation skills.

Part II: Tools for research (12 contact hours)

The aim of this part is to focus on tools in research, namely, R, MATLAB and LaTeX. These classes are structured to provide introduction to using R, MATLAB and LaTeX in economic research and prepare students for using these tools in other PhD courses, e.g. Advanced Econometrics. This part is highly practice-oriented as well.

Outline:

1. Introduction to programming in R (Dr Nerijus Černiauskas)
   a. Introduction to R (2 hours)
      i. Mathematical operations, matrices and vectors.
      ii. Writing a function.
   b. Basic data analysis in R (2 hours)
      i. Getting overview of data and data manipulation challenges.
      ii. Graphical analysis.
      iii. Regression analysis
2. Introduction to MATLAB (Dr Junghum Park)
   a. Using MATLAB (1 hour)
      i. Running MATLAB, using the interface.
      ii. Matrixes, operations and basic MATLAB functions.
   b. Scripts, Logic and Loops (2 hours)
      i. Creating MATLAB scripts.
      ii. Logical operators and Loops.
      iii. Creating functions.
   c. Creating Plots, writing good code, fixing bad code (1 hour)
      i. Creating and labelling graphs.
      ii. Saving graphs as pdfs.
      iii. Timing functions and writing efficient MATLAB code.
      iv. Common mistakes and how to fix them.
3. Introduction to LaTeX (Dr Linas Tarasonis)
   a. Intro to LaTeX (1.5 hours)
      i. Setting up a LaTeX document
      ii. Typesetting text
      iii. Handling LaTeX errors
      iv. Typesetting equations
      v. Using LaTeX packages
   b. LaTeX features (1.5 hours)
      i. Structured documents
      ii. Sections, labels and cross-references
      iii. Figures and tables in LaTeX
      iv. Automatic bibliographies with BibTeX
      v. Useful LaTeX packages and online resources
   c. Presentations and drawing (1 hour)
      i. LaTeX presentations with Beamer
      ii. Drawing in LaTeX with TikZ

Learning outcomes: After this course students will know the basic syntax and operations with R and MATLAB and how to make and use matrices, vectors, if statements, loops and user-defined functions in both programming languages. "The introduction to R" will allow students

become familiar with basic data analysis using different functions for data manipulation, graphics and regression analysis. "The introduction to MATLAB" will introduce students to graphical analysis with MATLAB as well and stress code efficiency. "The introduction to LaTeX" will allow students to write beautiful structured documents with figures, tables and automatic bibliographies using LaTeX, a de facto standard for the communication and publication of scientific documents.

Evaluation:

Final Grade = Grade of Part I * 0.5 + Grade of Part II * 0.5

The **Grade of Part I** will consist of two parts: an assignement (40%) and a take-home exam (60%). An assignement: students will have to hand in an introduction of their own paper in economics. It does not have to be a finished paper, because the introduction will be evaluated based on clarity of the presentation, the idea and the structure only. Take-home exam: students will have to write a report on a given paper in economics. The report will be given a high grade, if it discusses the research question, the contribution and the structure. Including suggestions for improvement is required as well.

The **Grade of Part II** will consist of three equally weihgted take-home problems:
1. Introduction to programming in R. Students will have to solve one take-home problem set, involving writing functions and doing simple data analysis in R.
2. Introduction to MATLAB. There will be one take-home problem set, involving the creation of MATLAB code that performs certain tasks and solves basic problems.
3. Introduction to LaTeX. There will be one take-home problem set, involving the creation of a scientific document using LaTeX.

Required reading

Part I:

McCloskey, D. (1985): Economical writing, Economic Inquiry, 23, 187-222.

McCloskey, D. N. (1983): The rhetoric of economics, Journal of Economic Literature, 21, 481-517.

Cochrane, J. (2005): Writing Tips for PhD Students, Chicago University,
https://www.johnhcochrane.com/s/phd_paper_writing.pdf

Gastel, B. and R. A. Day (2011): How to write and publish a scientific paper, Greenwood; 7 edition (June 16, 2011).

Zinsser, W. (2016): On Writing Well: The Classic Guide to Writing Nonfiction, Harper Perennial; Anniversary, Reprint edition (April 5, 2016).

Some additional references and the list of papers for presentations will be given when relevant during the course.

Part II:

Handley, Kyle - MATLAB Mini Course,
http://webuser.bus.umich.edu/handleyk/MatlabMini.pdf

Lees-Miller, J. An interactive introduction to LaTeX
https://www.overleaf.com/latex/learn/free-online-introduction-to-latex-part-1

Mathworks - MATLAB Primer (R2018a)
https://www.mathworks.com/help/pdf_doc/matlab/getstart

Venables, W. N. and D. M. Smith (2009): An Introduction to R, Network Theory Ltd., 2nd ed.

Wikibooks – LaTeX https://en.wikibooks.org/wiki/LaTeX

Wikibooks - MATLAB Programming, https://en.wikibooks.org/wiki/MATLAB_Programming

Additional references and suggested readings will be specified during the course.

Consulting Professors	Degree	Key publications during the last 5 years
Nerijus Černiauskas	Dr.	Černiauskas, N. (2023). The short run effects of childbirth on parents' earnings in the Baltics. Baltic Journal of Economics, 23(1), 45-63. Černiauskas, N., Sologon, D. M., O'Donoghue, C., & Tarasonis, L. (2022). Income inequality and redistribution in Lithuania: The role of policy, labor market, income, and demographics. Review of Income and Wealth, 68, S131-S166. Cerniauskas, N., & Jousten, A. (2021). Statutory, effective, and optimal net tax schedules in Lithuania. IZA journal of labor policy, 11(1). Černiauskas, N., & Čiginas, A. (2020). Measurement and decomposition of Lithuania's income inequality. Baltic journal of economics, 20(2), 139-169.
Guillermo Hausmann-Guil	Dr.	Hausmann-Guil, G., van Wincoop, E., & Zhang, G. (2016). The great recession: Divide between integrated and less integrated countries. IMF Economic Review, 64(1), 134-176.
Junghum Park	Dr.	"A Large Creditor in Contagious Liquidity Crises," (with Frederick Dongchuhl Oh), Journal of Banking and Finance, 146, 106706, 2023.

		"Managerial Incentives and the Medium of Exchange in Takeovers," (with Frederick Dongchuhl Oh), Managerial and Decision Economics, 43(8), 4077-4086, 2022. "Potential Competition and Quality Disclosure," (with Frederick Dongchuhl Oh), Journal of Economics and Management Strategy, 28(4), 614-630, 2019. "Hierarchical Outcomes and Collusion Neutrality on Networks," (with Biung-Ghi Ju), European Journal of Operational Research, 254(1), 179-187, 2016. "The Impact of Mandatory K-IFRS Adoption on IPO Underpricing," (with Hyun Duk Lee and Frederick Dongchuhl Oh), International Journal of Finance and Economics 27, 1101-1119, 2022. "The Efficiency of Financial Holding Companies in Korea," (with Garam Ahn and Frederick Dongchuhl Oh), Korean Economic Review, 36(1), 29-58, 2020. "Credit Ratings and Corporate Disclosure Behaviour: Evidence from Regulation Fair Disclosure in Korea," (with Frederick Dongchuhl Oh), Applied Economics, 49(35), 3481-3494, 2017.
Linas Tarasonis	Dr.	Garcia-Louzao, J., & Tarasonis, L. (2023). Wage and employment impact of minimum wage: evidence from Lithuania. Journal of Comparative Economics, 51(2), 592-609. Garcia-Louzao, J., & Tarasonis, L. (2022). Productivity-enhancing reallocation during the Great Recession: evidence from Lithuania. Oxford Economic Papers. Černiauskas, N., Sologon, D. M., O'Donoghue, C., & Tarasonis, L. (2022). Income inequality and redistribution in Lithuania: The role of policy, labor market, income, and demographics. Review of Income and Wealth, 68, S131-S166.

		Decreuse, B., & Tarasonis, L. (2021). Statistical Discrimination in a Search Equilibrium Model: Racial Wage and Employment Disparities in the US. Annals of Economics and Statistics, (143), 105-136. Dolado, J. J., García-Peñalosa, C., & Tarasonis, L. (2020). The changing nature of gender selection into employment over the great recession. Economic Policy, 35(104), 635-677. Borowczyk-Martins, D., Bradley, J., & Tarasonis, L. (2017). Racial discrimination in the US labor market: Employment and wage differentials by skill. Labour Economics, 49, 106-127.

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