**COURSE SYLLABUS FOR ADVANCED ECONOMETRICS – MASTER LEVEL**

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| **Basic data for the course** |
| **Academic unit:**  | Faculty of Economics |
| **Title of the course:** | Advanced Econometrics |
| **Level:** | Master |
| **Status of the course:** | Obligatory |
| **Year of studies:** | 1st Year, 2nd Semester |
| **Number of hours per week:** | 3+0 |
| **ECTS credits:** | 6 |
| **Time/location:** | TBD |
| **Tutor:** | Prof. Asoc. Dr. Valentin Toci |
| **Tutor’s contact details:**  | valentin.toci@uni-pr.edu |
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| **Content of the course** | This course provides a rigorous introduction to econometric techniques both for cross-sectional and panel data applications. The course provides a comprehensive treatment of topics important in applied econometric analysis on individual-level and longitudinal data. Major topics covered include: interpreting regressions, panel data and correlated errors, instrumental variables estimation, experimental data, differences-in-differences, regression discontinuity design, binary dependent variable and maximum likelihood estimation, and censored/truncated data, and sample selection. Each topic will include an overview of the econometric theory, followed by model estimation using Stata, and discussion of papers that apply these models. Throughout the course there will be discussion of econometric theory, whereas the key focus is on applied analysis, including issues of identification, specification, and execution. |
| **Course’s objectives:** | * Provide a rigorous introduction to the econometrics theory and techniques/ models for analysing cross-section and panel data.
* Equip students with skills on using techniques for analysing cross-section and panel data to critically analyse empirical research of others.
* Show how econometrics theory and techniques are used to inform policy making.
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| **The expected outcomes:** | Upon completion of this course, students will be able to:* Demonstrate systematic understanding of key areas of econometrics, an ability to apply and critically evaluate these.
* Appreciate the problem of definition and measurement, as well as causality and missingness that can occur in economic data,
* Determine econometric techniques for analyzing cross-sectional and panel data in the context of one’s own research, and justify methods based on statistical tests, robustness checks, identification strategies, and logical arguments
* Formulate and estimate a limited number of nonlinear models, truncated/ censored models, nonparametric models, and Maximum Likelihood Estimation used mainly in cross sectional and panel data,
* Critically appraise the result of such models and those of other researchers,
* Produce a well-organized report, which includes an interpretation for a non- specialist reader.
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| **The students’ workload *(hours per semester, ECTS)*** |
| **Activity** | **Weeks** | **Hours** | **Total** |
| Lectures | 15 | 3 | 45 |
| Seminars (theoretical and practical) |  |  |  |
| Case studies |  |  |  |
| Direct contact with tutor | 1 | 1 | 1 |
| Field research |  |  |  |
| Colloquiums | 2 | 6 | 12 |
| Homework | 4 | 6 | 24 |
| Individual study (at library or at home) | 15 | 4 | 60 |
| Final preparation for the exam | 2 | 4 | 8 |
| Evaluation |  |  |  |
| Projects, presentation etc.  |  |  |  |
| **Total** |  |  | **150** |
| **Teaching methods:**  | Lectures; tutorials - Minitab exercises using real case data sets and data sets from the book; exercises non sampling methodology; fieldwork (mini-research project in the field);  |
| **Assessment methods:** | **Activity and assignment point values**Grading will be based on:* Assignment 1 – 25% of the Grade
* Midterm exam - 50% of the Grade
* Assignment 2 - 25% of the Grade

OrFinal Exam, which contains 100% of the final grade. The maximum number of points is 100. The Final grade will be calculated as follows:Percentage Grade Grade Points91 – 100 A 1081 – 90 B971 – 80 C861 – 70 D 751 – 60 E6<50 FX5 |
| **Literature** |
| **Basic literature:**  | Wooldridge, Jeffrey M. 2010. Econometric Analysis of Cross Section and Panel Data, Second Edition. MIT Press.Greene, William 2011. Econometric Analysis, 7th edition, New York: Pearson Education. ***You do NOT have to purchase the most recent version of this textbook*.**  |
| **Additional literature:** | * Cameron A. and Trivedi, P., 2005. Microeconometrics: Methods and Applications. Cambridge University Press, New York.
* Cameron, Adrian Colin, and Pravin K. Trivedi. Microeconometrics using stata. Vol. 2. College Station, TX: Stata press, 2010.
* Cameron, A. Colin. "Panel data methods for microeconometrics using Stata." West Coast Stata Users' Group Meetings 2007. No. 13. Stata Users Group, 2007.
* Gujarati, D., 2009. Basic Econometrics. McGraw-Hill higher Education 5th edition, New York.
* Wooldridge, J., M., “Introductory Econometrics – A Modern Approach”, Third Edition – Thomson South-Western, 2006, Chapter 1 (only).
* Greene, W. 1998. Gender economics courses in liberal arts colleges: Further results. The Journal of Economic Education 29, no. 4: 291-300.

The texts will be supplemented with journal articles and current affairs readings drawn from daily newspapers and other internet sources.*Other supplementary materials will be uploaded on the SEMS.* |

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| **The detailed plan of work:**  |
| **Week** | **Topic**  |
| ***Week 1*** | Introduction: Greene (2011), Chapter 1 |
| ***Week 2*** | Review of Probability Theory: Greene (2011), Chapter 4 and 5 |
| ***Week 3*** | The Classical Model: Greene (2011), Chapter 3 |
| ***Week 4*** | Panel Data and Correlated Errors: Greene (2011), Chapter 13 |
| ***Week 5*** | Instrumental Variable Models: Wooldridge, Chapter 7 and 8***Assignment 1 (handed out; two weeks)*** |
| ***Week 6*** | Simultaneous-Equations Models: Greene (2011), Chapter 15 |
| ***Week 7*** | Differences-in-Differences (DD): Wooldridge, Chapter 10***Midterm Exam*** |
| ***Week 8*** | Binary Dependent Variable and Maximum Likelihood Estimation: Greene (2011), Chapter 17, 21 and 22 |
| ***Week 9*** | Binary Dependent Variable and Maximum Likelihood Estimation: Greene (2011), Chapter 17, 21 and 22 |
| ***Week 10*** | Binary Dependent Models and Missing Data and Imputation: Cameron Trivedi, Chapter 14 and 27  |
| ***Week 11*** | Multinomial Models: Cameron Trivedi, Chapter 15***Assignment 2 (handed out; two weeks)*** |
| ***Week 12*** | Censored, Truncated Data and Sample Selection: Greene (2011), Chapter 22 |
| ***Week 13*** | Models for Duration Data: Survival Analysis: Cameron Trivedi,, Chapter 17 |
| ***Week 14*** | Bivariate Probit Estimation: Greene (2011), Chapter 22 |
| ***Week 15*** | ***Final Exam (Cumulative)*** |

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| **Academic policies and code of conduct:** |
| **Quiz and exam related issues**There will be no makeup or early exams given. Please do not miss any quizzes or exams without a valid and documented excuse in advance otherwise you will receive a 0 for that quiz or exam. Please check UP policy for valid reasons (documented medical illness that prevents you from taking the exam, a death in your immediate family, or a documented mandatory participation in trainings for KSF members).You can only take the Final Exam at an alternative time if you present me with a valid document from an advisor verifying that you have at least 3 exams within 24 hours. Please check UP policy on this matter.**Cheating**All work and materials that you submit to the instructor for a grade must be your own work. Copying the work of others, using unapproved materials during exams and quizzes, or taking credit for work that you did not actually do is considered cheating and will not be tolerated. **Other*** Please read the chapters before you come to class.
* Come to class on time
* Respect your classmates and don’t forget, they are here to learn.
* If you do not understand what I am saying, stop me and ask questions.
* Do not talk to your neighbors during class. It distracts the students around you, and it distracts me.
* Try to participate during lectures and tutorials.
* Please do not send e-mails trying to negotiate the final grade as this will only have a negative influence on my decision.

**I reserve the right to ask you to leave class for the day if you violate any of the above policies.****Additional information**Students are expected to attend all scheduled lessons. Regardless of the reason, students may have no more than 3 un-excused absences before their grade is affected. Each un-excused absence after 3 will lower the student’s course grade by one grade. This is mandatory policy--there will be **no exceptions** to this rule and attendance will be taken on a lecture basis. Additionally, students are expected to come to class prepared to participate in the lesson and take notes. Students should bring to every *tutorial* a notebook and a pen or pencil. Smart (mobile) phones and similar electronic devices should be switched off and put away at the beginning of class. Students whose phones or similar devices disrupt class due to excessive ringing or similar behavior will be asked to leave the class and will be marked as absent for the day (will receive no credit for the lesson). Finally students who have special needs related to poor eyesight, learning disabilities, or any similar issue should contact the professor at the beginning of the term so that arrangements can be made to provide the necessary assistance |