Syllabus

Subject: **Introductory Econometrics**

Teacher: mgr Arleta Kędra

Aim of the course is to show the Students how wide the spectrum of Econometrics' application is. The Students will be able to use econometric models, test them for specific aspects, as heteroscadasticity or autocorrelation and to implement them in economic research. Students will be taught how to use not only basic statistical methods but also more advanced ones, basing on real-life examples provided for each topic.

1. **Introductory information**
   a. What is Econometrics? Aims and methodology
   b. Basis information on statistical data
   c. Concept of econometric model
2. **Revision of mathematical and statistical methods**
   a. Matrix algebra
   b. Verifying correlation
   c. Hypothesis testing
3. **Least squares method for simple regression**
   a. Theory
   b. Methodology
   c. Real-life examples
4. **Least squares method for multiple regression (models with two and more explanatory variables)**
   a. Theory
   b. Methodology
   c. Real-life examples
5. **Hypothesis testing**
   a. White test for heteroscedasticity
   b. Durbin-Watson test for autocorrelation
   c. Remsey's RESET test for specification
   d. Jarque-Berry's test for normality of residual
6. **Non-linear models with logarithmic variables**
   a. Theory
   b. Methodology
   c. Real-life examples
7. **Models with heteroscadasticity and/or autocorrelation**
   a. Cochrane-Orcuut estimation
   b. Prais-Winsten estimation
   c. Heteroscedasticity corrected method

Literature:

1. G. S. Maddala, *Introduction to Econometrics,* John Wiley & Sons, Ltd., Chichester, 2002.
2. W. H. Greene, *Econometric Analysis,* Pearson Education Inc, New Jersey, 2003

3. J. M. Wooldridge, *Introductory Econometrics: A Modern Approach,* Cengage Learning, Mason, 2013