

COURSE DESCRIPTION

Course name	Mathematical statistics and other probabilistic applications
Course type	research seminar (sd)
Supervisor	Tomasz Rychlik
ECTS credit allocation	1 – IM PAN Ph. D. program; 3 - recommended for MA programs
Duration	One semester
Number of hours	30
Language	English or Polish, if every participant speaks Polish
Prerequisites	Knowledge of probability theory on undergraduate level and basic course of mathematical statistics
Course content	Seminar is devoted to mathematical statistics and other applications of probability. In particular, the following topics are studied: statistical models in finance, analysis of stochastic dependence (e.g., copulae theory), Bayesian and robust methods in statistics, stochastic inequalities and reliability theory
Recommended reading	Barlow R.E., Proschan F. (1975). Statistical theory of reliability and life testing: probability models. Holt, Rinehart and Winston, New York. Lehmann E.L., Casella G. (1998). Theory of point estimation. 2 nd ed. Springer, New York. Lehmann E.L., Romano J.P. (2005). Testing statistical hypotheses. 3rd ed. Springer, New York. Nelsen, R.B. (2006). An introduction to copulas. 2 nd ed. Springer, New York. Shervish M.J. (1996). Theory of statistics. Springer, New York
Learning outcomes	A seminar participant should learn basic notions used in statistics and probability, get oriented in main research directions in the seminar topics. He/she should be able to prepare a talk (possibly with help of a supervisor) for the seminar, and actively participate in discussions.
Assessment methods and criteria	Based on attendance, active participation in discussions, and presentation of a talk
Remarks	