Mathematical Institute
Polish Academy of Sciences

COURSE DESCRIPTION

Course Name	Mathematical statistics
Course Type	research seminar (sd)
Supervisor	Tomasz Rychlik
ECTS credit allocation	1 – IM PAN Ph. D. program; 3 - recommended for MA programs
Duration	Two semesters
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 analysis of statistical data. In particular, the following topics are studied: stochastic simulation, discrimination, Markov chains, Monte Carlo methods for Markov chains, optimal design, inequalities, reliability theory, ordered statistical data
Recommended reading	Barlow R.E., Proschan F. (1975). Statistical theory of reliability and life testing: probability models. Holt, Rinehart and Winston, New York. Casella G., Robert C.P. (2003). Monte Carlo statistical methods. Springer, New York. David H.A., Nagaraja H.N. (2003). Order statistics. 3rd ed. Wiley, Hoboken. Lehmann E.L., Casella G. (1998). Theory of point estimation. 2nd ed. Springer, New York. Lehmann E.L., Romano J.P. (2005). Testing statistical hypotheses. 3rd ed. Springer, New York.
Learning outcomes	A seminar participant should learn basic notions used in statistics and probability, get oriented in main research directions of 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 (once a year)
Remarks	