

## **PhD Entrance Exam Syllabus**

Drawing statistical conclusions. Sufficient statistics and Neyman–Fisher factorization theorem. Point estimation: methods of estimation, sampling distribution of an estimator, methods of evaluating estimators. Confidence intervals and regions. Hypothesis testing: test statistic, p-value, methods of evaluating tests, relationship with confidence intervals. The likelihood function, score, observed and expected information and main properties. Estimation, tests and confidence intervals based on the likelihood function. Statistical models and main examples of parametric models.