

## Topics of lectures

Lecture 1	Classical probability theory. Conditional probability.
Lecture 2	Discrete random variables.
Lecture 3	Continuous random variables.
Lecture 4	Main probability distributions.
Lecture 5	Statistical inference. Population and sample. Estimation function.
Lecture 6	Properties of estimators.
Lecture 7	Methods for deriving estimates ( maximum likelihood method, least-squares method and the method of moments).
Lecture 8	Confidence intervals.
Lecture 9	Confidence interval for the mean. Chi-square distribution, Student's t-distribution.
Lecture 10	Confidence interval for the standard deviation and for difference of means.
Lecture 11	Hypothesis testing: test statistic, critical region, type I error, type II error.
Lecture 12	Hypothesis testing: power function, independent samples, paired samples. Tests about the mean.
Lecture 13	Hypothesis testing: chi-square test, F-test, p-value method, testing with confidence intervals.
Lecture 14	Types of data, measures of dependence.
Lecture 15	Introduction to linear regression.