# Foundations of probability and statistics

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# Plan

**L1** Events, $\sigma$-alg, samplespace, axioms of probability, probability space. [1]

**L2** Combinatorics, independence, conditional probability, random variables, expectation, variance, covariance, correlation [1]

**L3** Distributions, more expectations, skewness, kurtosis [1]

**L4** Functions of random variables, joint distributions, CLT [1]

**L5** Likelihood inference (likelihood function, MLE, LR) [3]

**L6** Estimation [3]

**L7** Hypothesis tests (sign. level, percentiles, $p$-value, procedure) [3]

**L8** Hypothesis tests (Power, multiple tests, ANOVA, equivalende to confidence intervals) [3]

**L9** Bayesian inference, graphical models [2]

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