

# 1314-MA235 Probability

First Semester 2013/2014

## Lecture times and locations

Monday 13:00-13:50 AC214

Thursday 13:00-13:50 AC201

**NOTE:** two different lecture rooms!

## Course lecturer

Dr. Milovan Krnjajić

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office hours: Thu 16:00-18:00 or by appointment (also open door policy)

## Course web page

All information will be communicated through the Blackboard or during the lectures.

## Course description

This is an introductory course to probability theory and its applications for students of Mathematics and Financial Mathematics. A prerequisite is a course in Calculus. Topics will include: probability spaces, properties of probabilities, conditional probability, independence of events; combinatorial analysis, sampling (ordered, unordered, with/without replacement); discrete and continuous random variables (r.v.), probability mass/density functions (PMF/PDF), cumulative distribution functions (CDF), Bernoulli, Binomial, Poisson distribution, functions of r.v. (change of variable), sums of independent r.v., expectation of r.v.; joint probability distributions, conditional r.v.-s (discrete and continuous); properties of expectation, probability generating functions, moment generating functions, important inequalities (Markov, Chebyshev), Central Limit Theorem, Law of Large Numbers.

## Course work and examination

Continuous assessment (CA) will include a combination of homework assignments and in-class quizzes; CA will contribute (about) 25% to the final mark. Examination will be according to the University rules and schedule.

## Reference books

C. Grinstead and L. Snell, *Introduction to Probability*, American Mathematical Society.

**NOTE:** a version of the book available online at

[http://www.dartmouth.edu/~chance/teaching\\_aids/books\\_articles/probability\\_book/book.html](http://www.dartmouth.edu/~chance/teaching_aids/books_articles/probability_book/book.html)

Hoel, Port, and Stone, *Introduction to Probability Theory*, Houghton Mifflin.

S.Ross, *A First Course in Probability*, Prentice Hall.

D.Stirzaker, *Probability and Random Variables*, Cambridge University Press.

Y.A.Rozanov *Probability Theory: A Concise Course*, Dover Publications.