

Probability

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Summary:

This course is intended for upper-level first-year courses in probability (but also statistics and random processes). The goal is to provide a clear and intuitive approach to these topics while maintaining a rigorous approach with respect to mathematical precision. At the end of this course, students will be able to cope with problems frequently encountered in theoretical computer science (urns and balls, birthday paradox, coupon collector, cover, random combinatorial structures, random generation, ...).

Plan:

- Basic
- Combinatorics
- Discrete Random Variables
- Continuous (and mixed) Random Variables
- Joint distributions
- Limit theorems, Convergence
- Random Discrete Structures : generation and typical properties at large-scale