Probability Theory 2: Syllabus

Samy Tindel

Purdue University

Probability Theory 2 - MA 539



э

Samy	

Outline





Samy	

3

・ロト ・四ト ・ヨト ・ヨト

Outline





Samy	

Ξ.

・ロト ・四ト ・ヨト ・ヨト

Nancy 1

Nancy, France - Google Maps

Address Nancy

04/09/13 05:45

Google Glasgow Copenhagen Denmark United Kingdom Gdansk of Man Leed: Hamburg Ireland Bremen Poland Amsterdam Birminghamo Poznan Netherlands London Bristol Wroclaw Germany Belgium Prague Krakow Czech Republic Paris Slovakia Munich Vienna O OBratislava Nantes OBudap o Graz Hungary France Switzerland Geneva Slovenia Lyon Mila Turin Croatia Bosnia and Herzegovina Serbia Toulouse Monaco Bilbac Italy Marseille Andorr Rome Monteneg Valladolid Zaragoza Porto BarcelonaO Tirana Naples Albania Madrid Palma de Mallorca ortugal Spain Palermo 62013 Goodeville Map data 62013 GeoBasis-DE/EKG (62009), Geografia

э

My Purdue information

- Office: 434, Math building
- Email: stindel@purdue.edu
- Office hours: Th 2:30-4:00pm
- Webpage: https://www.math.purdue.edu/~stindel/

Advertising probability theory Probability Theory:

- Interesting from a mathematical point of view
 - Martingales, Ergodicity, Brownian motion
 - Differentials for non differentiable processes
 - Links to partial differential equations
 - Analysis on infinite dimensional Gaussian spaces
- Crucial for modeling randomness
 - Finance
 - Theoretical and applied physics

Great names related to the field:

• Kolmogorov, Wiener, Itô, Levy, Doob

Recent Fields medallists:

• Werner, Villani, Hairer

Brief outline of the course

Chapters covered:

- Gaussian vectors and central limit theorem.
- Onditional expectation.
- Martingales.
- Ergodic theorems.
- Srownian motion.
- Itô's formula.

Bibliography:

- In R. Durrett: Probability: Theory and Examples.
- I. Karatzas, S. Shreve: Brownian motion and stochastic calculus.
- **③** R. Durrett: Stochastic calculus. A practical introduction.

Outline





Ξ.

<ロト <問ト < 目と < 目と



Course webpage:

https://www.math.purdue.edu/~stindel/teaching/ma539/ma539.html

Samy	

э

< □ > < 同 >

Evaluation

Homework:

• Hand-graded, every week, due on Tuesday

Oral participation:

• Assignment (in advance) of problems to be solved on the board

Grades

Total score calculation:

Homework600ptsOral participation bonus60 pts

Attendance, honesty

Attendance:

- Class attendance is expected.
- Reading textbooks ahead of time is strongly recommended.

Purdue Honors Pledge:

As a boilermaker pursuing academic excellence, I pledge to be honest and true in all that I do. Accountable together - we are Purdue

Other topics

Accommodations for students with disabilities:

- Be certified by the Disability Resource Center (DRC) as eligible for academic adjustments on exams or quizzes.
- Contact me.

Campus Emergency Notice: see www.math.purdue.edu/MA266 (*Click here*)