

# Probability Theory 2: Syllabus

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Purdue University

Probability Theory 2 - MA 539



# Outline

1 Presentations

2 Ground rules

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# Nancy 1

Nancy, France – Google Maps

04/09/13 05:45



Address **Nancy**



# My Purdue information

Office: 434, Math building

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# 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:

- 1 Gaussian vectors and central limit theorem.
- 2 Conditional expectation.
- 3 Martingales.
- 4 Ergodic theorems.
- 5 Brownian motion.
- 6 Itô's formula.

## Bibliography:

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

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# Webpage

Course webpage:

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

# 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:

Homework	600pts
Oral participation bonus	60 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](http://www.math.purdue.edu/MA266) (*Click here*)