Elements of Stochastic Processes: Syllabus

Samy Tindel

Purdue University

Elements of Stochastic Processes – MA 532

Outline

1. Presentations

2. Ground rules

Outline

1. **Presentations**
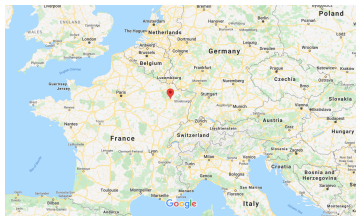
2. Ground rules

My Purdue information

History:

- 9th year as Professor at Purdue
- Before that: in Nancy (France)

Office: 434, Math building

Email: stindel@purdue.edu

Office hours: Monday 11:30am-1pm

Webpage: https://www.math.purdue.edu/ stindel/

Advertising Stochastic Processes

Stochastic Processes:

- Challenging from a mathematical point of view.
- Crucial for modeling in many areas:
  - Networks
  - Genetics and population dynamics
  - Finance

Great names related to the field: Mostly 20th century math.

- Doob
- Feller
- Itô
- Bachelier

Brief outline of the course

Chapters covered: from Grimmet-Strizacker's book
$\hookrightarrow$ *Probability and Random Processes*

1. Generating functions
2. Discrete time Markov chains
3. Continuous time Markov chains
4. Limit theorems
5. Martingales

Outline

1. Presentations

2. Ground rules

Webpage

Course webpage (also accessible from Brightspace):

https://www.math.purdue.edu/ stindel/teaching/ma532/ma532.html

Contents:

- Announcements
- Calendar and schedule
- Slides
- Written notes from class

Additional ressource:

- BoilerCast recordings available on Brightspace

Grades

Total score calculation:

• Homework	200 pts.
• 1 Midterm exam	150 pts.
• Final Exam (comprehensive)	150 pts.
• Participation bonus	20 pts.

Participation bonus rule:

- Questions will be asked in class
- Volunteers will get some points towards the bonus
- You are expected to participate, not to give an exact answer
- Stupid answers don't exist
- Aim: get to know everyone
- Remark: this is an experimental system

Emails

About emailing me:

- I do my best to answer emails
- However, I am not always extra quick at answering them

More rules

Access to the main rules:

Follow this link