# BMETE95AM34 Stochastic Processes (Sztochasztikus folyamatok) Fall 2017

SPECIFICATIONS: 4 credit course; two 90 minute lectures per week
INSTRUCTOR: Dr. Balázs Ráth,    CONTACT: `rathb@math.bme.hu`
WEBPAGE: `www.math.bme.hu/∼rathb`,    LANGUAGE OF LECTURES: English
DATES AND TIMES: Mon 14.15-16:00 at T603 and Fri 10.15-12.00 at H601
OFFICE HOURS: Thu 15.00-16.00 at H663

## TEXTBOOK:

- Rick Durrett: Essentials of Stochastic Processes (second edition, Springer, 2011)
- I will also post my hand-written lecture notes on the course web-page

## PREREQUISITES:

- For BSc students of BME: Probability I. (Val. szám. I.) BMETE95AM29
- For MSc students of BME: at least one previous course on probability theory

COURSE OUTLINE: Discrete-time Markov chains, Branching processes, Poisson point processes, Continuous-time Markov chains, Martingales.

MIDTERMS: There will be three 45 minute midterm exams during the regularly scheduled class on *Sept 29*, *Oct 27* and *Nov 27*. The make-up midterms will be held on the 14th week of the term. Midterm exercises are going to be very similar to exercises solved in class and homework exercises.

HOMEWORK ASSIGNMENTS: Weekly homeworks will be assigned, collected and graded by the instructor. In total, there will be 12 homeworks. The "official" homework solutions will be posted on the course webpage after the submission deadline. Homeworks that are handed in late will not be accepted. In case you submit your HW via e-mail, please use PDF format.

CLASS PRESENTATIONS: Students are encouraged to solve exercises at the blackboard for extra marks. I will notify volunteering students via email well in advance about the exercise that they will solve.

GRADING POLICY: Students are required to collect 40% of the homework marks and 40% of the midterm (or the make-up midterm) marks for each midterm in order to enter the final exam. Students are required to collect 40% of the final exam marks in order to pass the course.

| *Ingredients of the final grade:* | *Calculation of the final grade:* |
|---|---|
| $50\%$ : Final exam grade | $0 - 39\%$ : insufficient (1) |
| $12\%$ : First midterm grade | $40 - 54\%$ : sufficient (2) |
| $12\%$ : Second midterm grade | $55 - 69\%$ : satisfactory (3) |
| $12\%$ : Third midterm grade | $70 - 84\%$ : good (4) |
| $14\%$ : Weekly homework grade | $85 - 100\%$ : excellent (5) |