

Course syllabus

Markov processes and martingales

BMETE95MM07

Instructor: Bálint Vető

Semester: 2020/21/2;

Language: English;

Course attendance: The course is taught online in this semester with live problem sessions and pre-recorded lectures. Students must participate in at least 70% of the live sessions.

Homeworks: Homework exercises will regularly be assigned on the web site of the course. Solving the homework exercises is considered an important part of the completion of the course. Homework exercises must be submitted and will be graded. For any of the 10 series of homework exercises students can get 0, 1 or 2 points. Those who complete at least $2/3$ of a series get 2 points. Those who complete between $1/3$ and $2/3$ get 1 point, and those who complete less than $1/3$ of a series of homework exercises get 0 points. So, those students who complete at least $2/3$ of each of the homework assignments get 20 points altogether.

Midterm tests: There are two midterm tests during the semester. The questions are exercises similar to those given as homeworks. The maximal number of points at each midterm tests is 15.

Grading policy: Minimal requirements for completing the course are the following:

- minimum 8 points from submitted homework assignments and
- minimum 6 points from each midterm test.

Those who meet these requirements get a signature and can proceed to the exam. The exam consists of two parts: theoretical part with questions like definitions, theorems and proofs; exercise part with exercises similar to some of the homework exercises. The maximal number of points at the exam is 50. The total number of points is a score between 0 and 100.

Grading scale:

0–39%	fail (1)
40–54%	pass (2)
55–69%	satisfactory (3)
70–84%	good (4)
85–100%	excellent (5)

Topics:

- Martingales
- Markov chains
- Renewal processes
- Point processes
- Discrete state Markov processes

Further information: Via e-mail at vetob@math.bme.hu.