

# EXAM

## Set Theory

*MasterMath: 1st Semester 2021/22*

K. P. Hart, S. Hegeman, B. Löwe, R. Paßmann

17 January 2022, 14:00-17:00

### PRACTICAL ISSUES.

(1) You have 180 minutes for the exam, from 14:00 to 17:00 (unless you have been granted extra time by the Examinations Board; in that case, your extra time is added at the end). Make sure that you are in a location where (a) you can work without disturbance, (b) you can avoid contact with other people, and (c) you have the technical means to connect to elo, download the exam, produce a pdf file of your answers, and submit it at the end of the exam (cf. 2, 8, & 9).

(2) At the beginning of the exam, you can download the exam questions from elo. If you have any connectivity problems, contact us as soon as possible by e-mail via

`k.p.hart@tudelft.nl` and `loewe@math.uni-hamburg.de`

or by calling **+31 15 278 4572** and we shall try to find a solution.

(3) You can then work on the exam offline for three hours until you submit your solutions (cf. 9).

(4) During this period, you **are allowed** to use books and all of the course material provided by us, as well as all of your notes. Please make sure that you have a pdf copy of the relevant chapters of Jech's book available: this will help you to quote results when needed.

(5) You are not allowed to be in contact with any other person during the exam by any means. You will be required to confirm this with your signature (cf. 7).

(6) You write the answers to the question in handwritten form, either on paper or electronically hand-written (e.g., on a tablet with a stylus). If you are using a tablet, do not use any text recognition software to transform the handwriting into typed text: the solutions should be in your own handwriting.

(7) You finish writing at 17:00. After finishing, please copy the following sentence to the last page and sign it:

*"This exam was solely undertaken by myself, without any assistance from others, and without the use of sources other than those allowed."*

(8) After this, you produce a pdf file of your written solutions. If you wrote on a tablet, make sure (in advance) that you know how to save the file in pdf format. If you wrote on paper, either scan them or use some smartphone scanning software. Also in this case, make sure (in advance) that you know how to save everything in a single file in pdf format. Please include some form of photo identification in the pdf file, i.e., either your student ID card or your national ID card or passport. Check that your file is legible and complete, in particular that you did not forget a page and that you included the confirmation statement and your signature (cf. 7), and your photo ID.

- (9) After checking everything, please upload the pdf file of your answers via elo. This should be done by 17:15 (at the latest, fifteen minutes after the end of the exam; if you have been granted extra time, this time changes accordingly). If you experience connectivity problems or any other technical problems at this time, please contact us immediately by calling **+31 15 278 4572**.
- (10) During the 60 minutes after the exam, we may check the identity of a randomly selected group of students. If you are randomly selected, you will be contacted by e-mail and invited to a video Zoom call where we check your identity and the fact that the uploaded files correspond to what you have written. For this purpose, please make sure that you are available for a video call in the 60 minutes after the end of the exam.

### **EXAM STRUCTURE.**

- (1) The exam will have two parts, a mandatory Part I and an optional Part II. Part I will have two questions and Part II will have three questions.
- (2) In order to receive a passing exam score, you must attempt both questions in Part I. Each of them is worth  $3\frac{1}{2}$  points for a total of 7 points. They will be marked like the *Understanding & Explanation* questions, i.e., 3 points for a *satisfactory* answer and  $3\frac{1}{2}$  points for a *good* answer. A satisfactory answer to both questions in Part I will be sufficient to receive a passing exam score.
- (3) In addition, you may choose as many of the three questions in Part II, each of which is worth 1 point. The total exam has 10 points.