

# MM508 Topologi I

## Ugeseddel 1

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The home page of this course can be found on Blackboard or directly on <http://www.imada.sdu.dk/~njn/MM508>

**In the lectures on Tuesday and Thursday in week 45** we have covered the following material: The concept of a function, properties of  $\mathbb{N}$ ,  $\mathbb{R}$ , and  $\mathbb{C}$ .

Further we have defined normed spaces, and inner product spaces, and proved the important Cauchy-Schwartz'Inequality. This corresponds to the notes, pages 1–8 and 10–14..

**In the lectures on Friday in week 45 and week 46** we shall cover the Axiom of choice, continuous functions on  $\mathbb{R}$ , and start on the theory of metric spaces.

**The exercise book** is now available in the book shop, price 106 kr. Note that I get 0 kr. out of this. The printing office made a mistake on the cover, it should be 2012 and not 2011.

### Exercises for week 46

- The lecture notes: 0.3, Theorem 0.4, 0.5, and go through the proofs of (i)–(iv) on page 8.
- Additional exercises: 7, 8.
- The exercise book: 1, 2, 4 (only 1.), 5, 9. Hint to the triangle inequality in 4: show first the the function  $t \rightarrow \frac{t}{1+t}$  is increasing on  $[0, \infty[$

Announcements from Imada to you will normally be given on the weekly notices. Sometimes it happens that an announcement cannot wait until the next weekly notice comes. In these cases you should consult the home page under “Announcements”.

Greetings Niels Jørgen