

As a part of MAT4TOP assessment, every student will give two presentations, about 20 minutes each, on one of the topics below. The presentations are at the usual Lecture time on **Monday November 9th**.

Tikz/beamer/on-board presentations or any mixture of those are equally good. Your mark will depend on the mathematical content and on your presentational skills plus a good structure and composition. Please try not to use anything which we didn't cover in the subject, unless this is absolutely necessary or unless you introduce it in your talk.

Topics:

- (1) Sequential compactness, its relation to ordinary compactness and Bolzano-Weierstass Theorem.
- (2) Uniform continuity and Heine-Cantor Theorem.
- (3) Compactness in $C[a, b]$ and Arzelà-Ascoli Theorem.
- (4) Van Kampen's Theorem.
- (5) Fundamental group of surfaces.
- (6) Cardinality, Cantor-Schröder-Bernstein Theorem and other interesting facts.
- (7) Hilbert's Nullstellensatz and Zariski Topology.
- (8) Tychonoff Theorem for infinite products.
- (9) Urysohn Metrization Theorem.
- (10) Homology groups: definition and something.
- (11) Any topic of your choice, but nontrivial and sufficiently interesting (and related to topology).