



## TOPOLOGY SEMINAR SS 2026

### TOPOLOGICAL K-THEORY

**Time and Place:** We meet on Fridays 2-4pm c.t., INF 205, room SR 3. The first meeting is on April 17, 2026, at which point talks will be distributed.

**Registration:** The seminar is open to students enrolled in the Mathematics Bachelor or Master program. Please register online both on HeiCO and on the MaMpf-System. To receive credit points, you must give a talk. Towards the end of the course period, you need to register on HeiCO for a seminar-“exam”, which is a formal necessity that enables grades to be entered.

**Info:** K-theory was originally introduced by Grothendieck in algebraic geometry. Its use in topology (and global analysis) was emphasized by Atiyah and Hirzebruch. Applications in various areas of mathematics exist, notably to index theory. Topological K-theory is a generalized cohomology theory whose elements are represented by (formal differences of) vector bundles. A main result of the seminar will be Bott’s periodicity theorem. The seminar language is English.

**Prerequisites:** *Analysis 1, 2* and *Linear Algebra 1, 2*. The seminar is particularly suitable for students who took *Algebraic Topology 1* or *Differential Topology 1*.

**Literature:**

Atiyah, *K-Theory*, Advanced Book Classics, Addison-Wesley, 1989.