In this series of talks we present some ideas behind the subject of Topology.

In particular we will discuss some important numerical invariants of topological spaces such as the dimension and the category. Then we will concentrate on a relatively new numerical invariant in Topology called topological complexity (TC). This invariant was introduced by M. Farber to study stability of algorithms for robot motion. It turns out that the TC is an interesting invariant to study from the point of view of Topology.

We will show that for motion planning algorithms of robotic arm one needs to extend Farber's concept of TC from topological spaces to mapping between spaces.