Colloquium

November 20, 3:00 p.m. (8th Period)

(in the Atrium)

Speaker: Ekansh Jauhari

Title: Topological complexity of intertwining motion

<u>Abstract</u>

Topological complexity of a space X, denoted TC(X), is a homotopy invariant that measures the complexity of motion planning algorithms for autonomous systems with configuration space X. In this talk, we will consider a special type of motion for some advanced autonomous systems and discuss an approach to measure the navigational complexity of that kind of motion. This will introduce us to the notion of intertwining complexity of a space X, denoted iTC(X), which does a far better job than TC(X) in accurately determining the complexity of advanced motion planning algorithms on X. Then we will look at some theoretical aspects of intertwining complexity and its cousin invariant, intertwining LS-category, and compute them for various finite CW complexes.