# Analysis Seminar

# Invariant Subspaces and Cyclic vectors of Shift Operators In Hardy Space

**By**

## Ayşe Verda Irmak
## (Bilkent)

**Abstract:**  This is a Senior Project presentation. The project examines invariant subspaces and cyclic vectors in Hardy spaces for the forward and backward shift operators. For the forward shift, Arne Beurling showed that every invariant subspace can be described as the product of an inner function and the Hardy space itself. For the backward shift, invariant subspaces correspond to model spaces, which are the orthogonal complements of forward shift subspaces. Cyclic vectors, which are closely connected to invariant subspaces, are also studied.

**Date:** Tuesday, December 24, 2024
**Time:** 14:00-15:00
**Place:** SA141 - Mathematics Seminar Room