NOVA SOUTHEASTERN UNIVERSITY | NSU Florida

MATHEMATICS COLLOQUIUM SERIES

Hosted by the Department of Mathematics

Time: Friday, November 1st, 2019, 12:05-12:55pm

Place: Parker Building, Room 338

Speaker: Papiya Bhattacharjee, Instructor

Florida Atlantic University

Title: Algebraic Frames and Ultrafilters

Abstract: A frame, also known as pointfree topology, is a complete lattice that satisfies a strong distributive property, known as the 'frame law'. Originally, the study of frames began as studying topological spaces without points, hence the name pointfree topology. Due to this connection, different topological concepts can be generalized to frames, for example, compactness. In the first part of the talk I will explain the basic notions of frames and their connection with topology.

It turns out that we can find frame structure in other categories than topological spaces. For example, given a commutative ring R with identity, the lattice of radical ideals of R, Rad(R), is a frame. As a result, concepts from ring structure can also be generalized to frames, for example, primes and minimal primes, annihilators, etc. I will discuss some of these concepts in the language of frame theory.

In the last part of the talk, I will describe filters and ultrafilters on frames and show their connections with certain prime structures of a frame.

[Contact: MCS Organizers Prof. Jing Chen, jchen1@nova.edu, or Prof. Evan Haskell, haskell@nova.edu]