

Department of Mathematics, BGU

Probability and ergodic theory (PET)

On Wednesday, July, 12 2017

At 11:00 – 12:00

In Math 101-

Basheer Abu Khalil

will talk about

Definition of Chaos In Sense Of Devaney

Abstract: Devaney's definition of chaos is one of the most popular and widely known. A continuous map f from a compact metric space (X, d) to itself is chaotic in the sense of Devaney if (1) f is transitive, (2) the set of all periodic points of f is dense in X , and (3) f has sensitive dependence on initial conditions. We will show that (1) and (2) imply (3) in Devaney's definition in any metric space. We will show (1) and (3) do not imply (2) and (2) ; (3) do not imply (1). We will also show that for continuous maps on an interval in \mathbb{R} ; transitivity implies that the set of periodic points is dense. It follows that transitivity implies chaos, and we will give some examples to note that there are no other trivialities in Devaney's definition when restricted to interval.

Please Note the Unusual Day and Time!