

CENTRAL MICHIGAN UNIVERSITY
Department of Mathematics
GRADUATE STUDENT
SEMINAR

ARKABRATA GHOSH
Central Michigan University

BÉZOUT'S THEOREM AND APPLICATIONS

Tuesday, April 2, 4:00 pm - 5:00 pm
Pearce Hall, Room 227

Algebraic curves plays a central role in Algebraic Geometry that concerns the zero set of polynomials. A general question asks whether there exists a method or algorithm to determine the number of intersection points (counted with multiplicities). If we consider the spaces over \mathbb{R} or \mathbb{C} , there exist examples such that, in these spaces, one can have two curves where they have less number of intersection points than the product of the degree of the corresponding polynomials defining the curves. Then Bézout's theorem plays a significant role in solving the possible inconsistency. Bézout's Theorem says that if you have a homogeneous polynomial f with degree m and a homogeneous polynomial g of degree n in the complex projective plane $\mathbb{C}\mathbb{P}^2$, then we have exactly mn points of intersection counted according to the multiplicity. I will prove the theorem and will compute some examples of this theorem.

Snacks are available in the seminar room.