# LINEARITY IN NONLINEAR SETTINGS

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ABSTRACT. For the last decade there has been a generalized trend in Mathematics on the search for *large* algebraic structures (linear spaces, closed subspaces, or infinitely generated algebras) composed of mathematical objects enjoying certain *special* properties.

This trend has caught the eye of many researchers and has also had a remarkable influence in Real and Complex Analysis, Operator Theory, Summability Theory, Polynomials in Banach spaces, Hypercyclicity and Chaos, and general Functional Analysis.

Throughout the lectures within this mini course we shall provide an account on the advances and on the state of the art of this trend, nowadays known as *lineability* and *spaceability*, within the framework of Real Analysis.