

MATH6325 - Nonlinear Analysis I

[MATH 6325](#) Nonlinear Analysis I (3 semester credit hours) Topological degree in finite dimensions and applications to intermediate value theorem in dimension $n > 1$, Fundamental Theorem of Algebra, Argument Principle in Complex Analysis, Brouwer fixed point theorem, Poincare-Bendixson Theorem on periodic solutions to ODEs, Lyapunov stability of equilibrium, guiding function method, Leray-Schauder degree, solvability of boundary value problems, and bifurcation theory. Prerequisite: [MATH 6301](#). (3-0) T