
Mathematical analysis C

Programma

Curves in two or three dimensions; parametrisation and representation; length of a curve; integral of a function on a curve.

Continuity for functions of several variables; differentiability and partial derivatives, directional derivatives, gradient vector, steepest ascent, extremal points; extremal points on a curve; constrained extrema.

Sequences and series of functions: pointwise, uniform, absolute and total convergence; criteria for power series.

Differential equations: existence and uniqueness theorem; linear differential equations of the first order.

Multiple integrals over normal and general domains.

Differential forms (or vector fields) and their integration (or work); exact and closed forms (or conservative and curl-free fields)