MATH S-21a. Multivariable Calculus (CRN: 30189)

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To see how calculus applies in situations described by more than one variable, we study vectors, lines, planes, parameterization of curves and surfaces; partial derivatives, directional derivatives, and gradients; optimization and critical point analysis, including the method of Lagrange multipliers; integration over curves, surfaces, and solid regions using Cartesian, polar, cylindrical, and spherical coordinates; vector fields, line and surface integrals for work and flux; and the divergence and curl of vector fields together with applications.