



Differential Geometry: Curves - Surfaces - Manifolds (2nd Revised edition)

By Wolfgang Kühnel

American Mathematical Society. Paperback. Book Condition: new. BRAND NEW, Differential Geometry: Curves - Surfaces - Manifolds (2nd Revised edition), Wolfgang Kühnel, Our first knowledge of differential geometry usually comes from the study of the curves and surfaces in \mathbb{R}^3 that arise in calculus. Here we learn about line and surface integrals, divergence and curl, and the various forms of Stokes' Theorem. If we are fortunate, we may encounter curvature and such things as the Serret-Frenet formulas. With just the basic tools from multivariable calculus, plus a little knowledge of linear algebra, it is possible to begin a much richer and rewarding study of differential geometry, which is what is presented in this book. It starts with an introduction to the classical differential geometry of curves and surfaces in Euclidean space, then leads to an introduction to the Riemannian geometry of more general manifolds, including a look at Einstein spaces. An important bridge from the low-dimensional theory to the general case is provided by a chapter on the intrinsic geometry of surfaces. The first half of the book, covering the geometry of curves and surfaces, would be suitable for a one-semester undergraduate course. The local and global theories of curves and surfaces...



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