Invitation to Partial Differential Equations

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This book is based on notes from a beginning graduate course on partial differential equations. Prerequisites for using the book are a solid undergraduate course in real analysis. There are more than 100 exercises in the book. Some of them are just exercises, whereas others, even though they do require new ideas to solve them, provide additional important information about the subject.


Extrinsic Geometric Flows

Ben Andrews, The Australian National University, Canberra, Bennett Chow, University of California, San Diego, La Jolla, Christine Guenther, Pacific University, Forest Grove, OR, and Mat Langford, University of Tennessee, Knoxville

The goal of this book is to give an extensive introduction to a few of the most prominent extrinsic flows, namely, the curve shortening flow, the mean curvature flow, the Gauss curvature flow, the inverse-mean curvature flow, and fully nonlinear flows of mean curvature and inverse-mean curvature type.