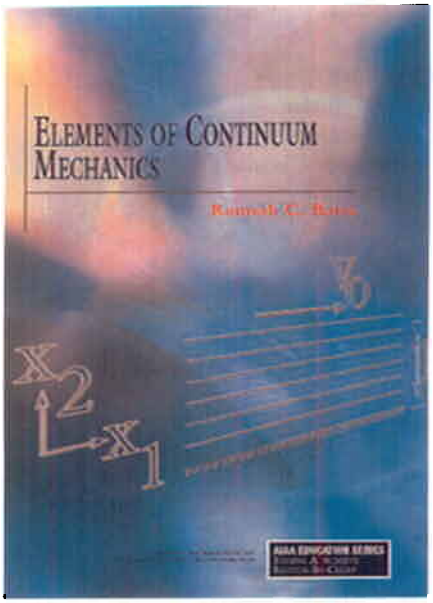

Elements of Continuum Mechanics

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ABOUT THE BOOK

As the ever-growing capabilities of numerical tools are being used to simulate how fluids and solids respond to high temperatures and severe loads, a fundamental understanding of the theory of large coupled thermo-mechanical deformations will play an ever-increasing role. This requires a sound understanding of the basic principles of non-linear continuum mechanics such as those given in this text book. This book differs from several others in the market in that it provides numerous example problems from every day life which should help develop a better understanding of a nonlinear theory. The book is oriented more towards engineers than mathematicians.

After briefly reviewing the mathematical preliminaries in Chapter 2, the theory of large deformations of a continuum is developed in subsequent chapters. Special emphasis is placed on constitutive relations. Theories developed in earlier chapters are illustrated through solutions of several nonlinear and linear problems in latter chapters.

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