



## An Introduction to the Mathematical Theory of Finite Elements (Paperback)

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By J. Tinsley Oden

Dover Publications Inc., United States, 2011. Paperback. Book Condition: New. 231 x 155 mm. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*.This introduction to the theory of Sobolev spaces and Hilbert space methods in partial differential equations is geared toward readers of modest mathematical backgrounds. It offers coherent, accessible demonstrations of the use of these techniques in developing the foundations of the theory of finite element approximations. J. T. Oden is Director of the Institute for Computational Engineering Sciences (ICES) at the University of Texas at Austin, and J. N. Reddy is a Professor of Engineering at Texas AM University. They developed this essentially self-contained text from their seminars and courses for students with diverse educational backgrounds. Their effective presentation begins with introductory accounts of the theory of distributions, Sobolev spaces, intermediate spaces and duality, the theory of elliptic equations, and variational boundary value problems. The second half of the text explores the theory of finite element interpolation, finite element methods for elliptic equations, and finite element methods for initial boundary value problems. Detailed proofs of the major theorems appear throughout the text, in addition to numerous examples.



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