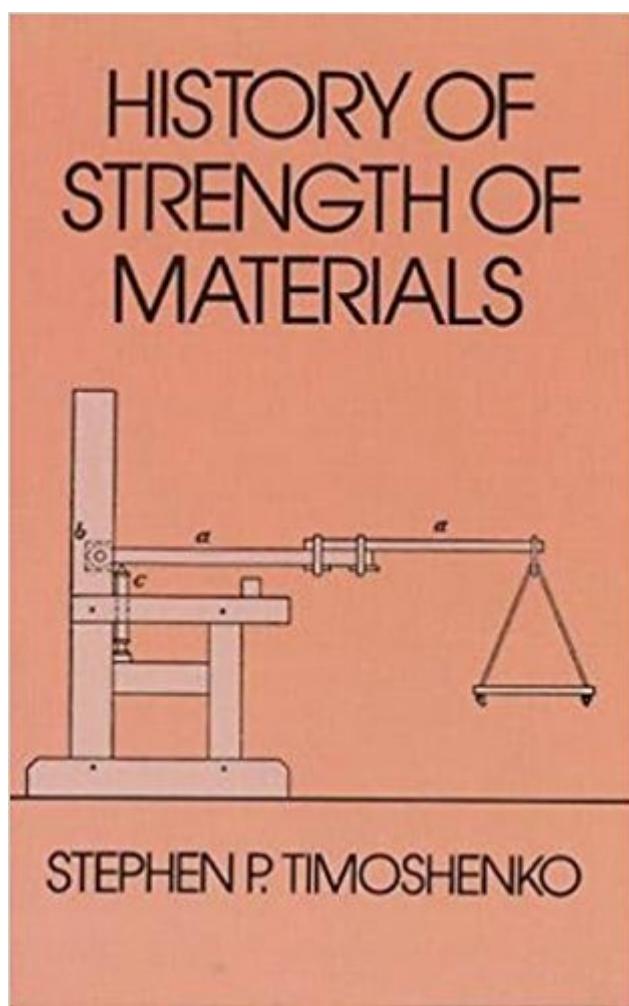


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History Of Strength Of Materials (Dover Civil And Mechanical Engineering)



Synopsis

Strength of materials is that branch of engineering concerned with the deformation and disruption of solids when forces other than changes in position or equilibrium are acting upon them. The development of our understanding of the strength of materials has enabled engineers to establish the forces which can safely be imposed on structure or components, or to choose materials appropriate to the necessary dimensions of structures and components which have to withstand given loads without suffering effects deleterious to their proper functioning. This excellent historical survey of the strength of materials with many references to the theories of elasticity and structures is based on an extensive series of lectures delivered by the author at Stanford University, Palo Alto, California. Timoshenko explores the early roots of the discipline from the great monuments and pyramids of ancient Egypt through the temples, roads, and fortifications of ancient Greece and Rome. The author fixes the formal beginning of the modern science of the strength of materials with the publications of Galileo's book, "Two Sciences," and traces the rise and development as well as industrial and commercial applications of the fledgling science from the seventeenth century through the twentieth century. Timoshenko fleshes out the bare bones of mathematical theory with lucid demonstrations of important equations and brief biographies of highly influential mathematicians, including: Euler, Lagrange, Navier, Thomas Young, Saint-Venant, Franz Neumann, Maxwell, Kelvin, Rayleigh, Klein, Prandtl, and many others. These theories, equations, and biographies are further enhanced by clear discussions of the development of engineering and engineering education in Italy, France, Germany, England, and elsewhere. 245 figures.

Book Information

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Customer Reviews

The father of modern engineering mechanics, Stephen Timoshenko (1868–1972) taught for decades at Stanford University. His seminal engineering texts remain in wide use.

EXCELLENT..

This is a really fantastic book. I am a third into it and I am already in love. Provided you have already taken a course in strength/mechanics of materials, elasticity theory, this book gives a good perspective of the subject. It is fun taking the wrong assumptions earlier scientists took and working out what the implications of those assumptions would be and comparing that to what we now know. The one feature which can be irritating is how Timoshenko quotes French or German statements and does not bother to give an English translation. Oh, figures are also poorly labelled, difficult to match with the text. Even then, the book is awesome!

Well written History of solid mechanics by the most influential teacher/researcher/engineer of the twentieth century. Written with unmistakable clarity and compassion for the subject.

If you are not interested in civil engineering than you would probably be disappointed with this great math history book. It covers all the great mechanical master-builders and mathematical thinkers over the last five hundred years. It spans the whole length of their contributions to the field of engineering concerning the strength, deformations, and disruptions of solid materials pertaining to architectural structures and industrial features. This book is invaluable to anyone interested in the basis of today's theoretical equations, accomplishments of the respected mathematicians and their accepted applied scientific practices.

I am researching for a book about the building of the major bridges across the East River in New York. This book gave me insight into the work that went on before the designers of those bridges began their work. Timoshenko is the god of structural engineers. I never realized how erudite his non technical writing was.

A book that can't be missed

Excellent review for those who like the history of today's principles in strength of materials. Includes biographies of Euler, Lagrange, Navier, Saint-Venant and many other influencial scientists.

This is a must-read for any solid mechanician. Timoshenko gives a fascinating overview of the history of strength of materials and related fields with great prose and occasional technical discussion. The price is perfect--get this on your shelf.

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