

The Stephen P. Timoshenko Collection

The books in this collection were given to Stanford University by Dr. Timoshenko in the late 1950s. His personal library encompassed over 2400 volumes covering his study of the history of mechanics. Dr. Timoshenko built relationships with experts all over the globe and this unique position is reflected in the variety of materials in the collection. The books on display in the Terman Engineering Library represent the majority of his collection; however a number of particularly rare or fragile items are housed in the Special Collections Department of the University Library.



Stephen Prokofyevich Timoshenko (1878-1972) is often referred to as the father of applied mechanics in the United States. He wrote seminal works in the areas of engineering mechanics, elasticity and the strength of materials, some of which are still in regular use. His accomplishments in the field of applied mechanics and his influence in engineering education are still felt today. During his tenure at Stanford, he brought together an internationally renowned faculty that served as a magnet to students and scholars from all over the world.

His early work included research in a variant of the Rayleigh-Ritz method of elastic calculations and pioneering his own work on buckling. In 1909 he also published the first version of his famous book, *Strength of Materials* in Russian and later in Prussian. *Strength of Materials* wasn't published in English until 1930.

The popularity of *Strength of Materials* led to two additional titles, *Elements of Strength of Materials*, coauthored with D. H. Young and *Mechanics of Materials*, co-authored with J. M. Gere.

"Professor Stephen P. Timoshenko has enriched the lives of thousands of his students and colleagues during his many years of active work. He is known to most of us as a teacher, writer, researcher, and advisor, and if anyone deserves to be called 'the father of engineering mechanics' in the United States it surely would be Professor Timoshenko."

James M. Gere and Donovan H. Young - from the forward to Timoshenko's book *As I Remember*

Timoshenko's other famous textbooks include:

- *Advanced Dynamics* co-authored with D. H. Young
- *Theory of Elasticity*
- *Theory of Elastic Stability*
- *Theory of Plates and Shells*
- *Theory of Structures*
- *Applied Elasticity*
- *History of Strength of Materials*

Timoshenko also wrote two other books, *Engineering Education in Russia* and *As I Remember* (his autobiography).

In 1957 the American Society of Mechanical Engineers established a medal named after Stephen Timoshenko. He became its first recipient. The Timoshenko Medal is given annually for distinguished contributions in applied mechanics.

Dr. Timoshenko was elected a member of 17 Academies and scientific societies throughout the world, including the National Academy of Sciences (USA), Royal Scientific Society of Great Britain, and the USSR Academy of Sciences.

Dr. Timoshenko studied for his first degree in Russia at the Institute of Engineers of Ways of Communication. He also did advanced studies in Germany at the Munich Polytechnic Institute and at the University of Göttingen, from which he graduated in 1905. He was awarded 10 gold medals for his scientific merits: two medals in Russia before 1917, three in the USA, one in France, one in Belgium, one in England and the James Watt International Medal which is awarded every five years to the most outstanding engineer in the world. He received honorary doctoral degrees from many universities.

References and more information

- Stephen P. Timoshenko. *As I Remember; the autobiography of Stephen P. Timoshenko*. Princeton, Van Nostrand, 1968,
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- Biographical Memoirs v.53 National Academy of Sciences, 1982 - http://www.nap.edu/openbook.php?record_id=576&page=322
- Richard G. Weingart. "Stephen P. Timoshenko: Father of Engineering Mechanics in the U.S.," *Structure Magazine*, August 2007. <http://www.structuremag.org/article.aspx?articleID=366>