

## Strength of Materials

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## Product Description

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The sixth edition of the book has thoroughly been modified and enlarged to meet the revised syllabi of many universities and other professional examination like AMIE and above all to incorporate the suggestions received from the students and faculty alike. Additional problems on two-dimensional complex stress systems have been fully solved by both analytical and Mohr's circle method so that the readers are made aware of the fact that the sign shear stress on a particular plane has its one important role to play so as to arrive at the correct result which otherwise is normally overlooked or even sometimes neglected. The term "bending Moment" and "twisting Moment" have been introduced as vector quantities in order to bring out the difference between them so that the reader can easily decipher each of them and proceed ahead to accomplish the associated objectives. The chapter on Thick Cylinders had been re-written to keep uniformity in sign convention of the stresses throughout the entire text. Further in this chapter the process of autofrettage of a thick cylinder has been introduced along with the "Simplified" theory of this process. The author has endeavored to familiarize the readers with the "Yield point phenomenon of low carbon steel", "quantitative definitions of ductility and malleability" and "Negative Poisson's Ratio" which were hitherto not dealt with in most of the text on the subject. On the specific demand of the students almost all the chapters have been supplemented with objective type questions along with more number of worked examples.

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**Chapter 1:** Simple Stress and Strain. **Chapter 2:** Complex Stresses and Strains. **Chapter 3:** Shearing Force and Bending Moments in Beams. **Chapter 4:** Bending Stresses. **Chapter 5:** Shear Stresses in Beams. **Chapter 6:** Deflection of Beams. **Chapter 7:** Torsion of Circular Shafts. **Chapter 8:** Struts and Columns. **Chapter 9:** Thin Shells. **Chapter 10:** Thick Cylinders. **Chapter 11:** Springs. **Chapter 12:** Strain Energy and Deflection due to Shear and Bending. **Chapter 13:** Theories of Failure. **Chapter 14:** Bending of Curved Bars. **Chapter 15:** Stresses Due to Rotation. **Chapter 16:** Unsymmetrical Bending. **Chapter 17:** Plastic Theory of Bending. **Chapter 18:** Three Dimensional Stress System. **Chapter 19:** Torsion of Non-Circular Shafts. **Chapter 20:** Miscellaneous Problems. **Chapter 21:** Plastic Theory of Bending : Index. **Appendix**



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## Author

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**D.S. BEDI** Dr. D.S. Bedi is one of the distinguished writers in India. He possesses a very excellent academic background. He had held various high positions viz. formerly Professor Emeritus at Department of Mechanical Engineering, Institute of Engineering and Technology (Punjab); Professor & Head, Dept. of Mechanical Engineering, Thapar Institute of Engineering & Technology (Punjab); Visiting Professor at Wayne State University, Detroit, MI (USA); Principal, Baba Banda Singh Bahadur Engineering College, (Punjab); Advisor-cum-Consultant at G.G.S. College of Modern Technology (Punjab); Director, Punjab College of Engineering; Technology, Punjab.

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# Engineering Mechanics

**SECOND EDITION**

**DS BEDI • MP POONIA**

## Engineering Mechanics

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### Product Description

This book is based on expertise of the authors obtained through their long teaching careers. It is put up in a simple language so that it could cater to one and all. The attention of the students is drawn to the topics of bending moments and twisting moments which are not properly explained in most of other books. They have been explained with the help of Vectors, which are used to present these quantities in such a way that one can easily distinguish between these two, as what is Bending moments and what is Twisting Motions.

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**Chapter 1 :** Two Dimensional Force System. **Chapter 2 :** Friction. **Chapter 3 :** Shearing Force and Bending Moment in Beams. **Chapter 4 :** Truss. **Chapter 5 :** Centroid, Centre of Gravity, Second Moment of Area and moment of Inertia. **Chapter 6 :** Kinematics of Rigid Body. **Chapter 7 :** Kinetics of Rigid Bodies. **Chapter 8 :** Simple Stress and Strain. **Chapter 9 :** Elastic Constants, Complex Stresses and Strain Energy. **Chapter 10 :** Pure Bending of Beams. **Chapter 11 :** Torsion. **INDEX IMPORTANT MATHEMATICAL FORMULAE**

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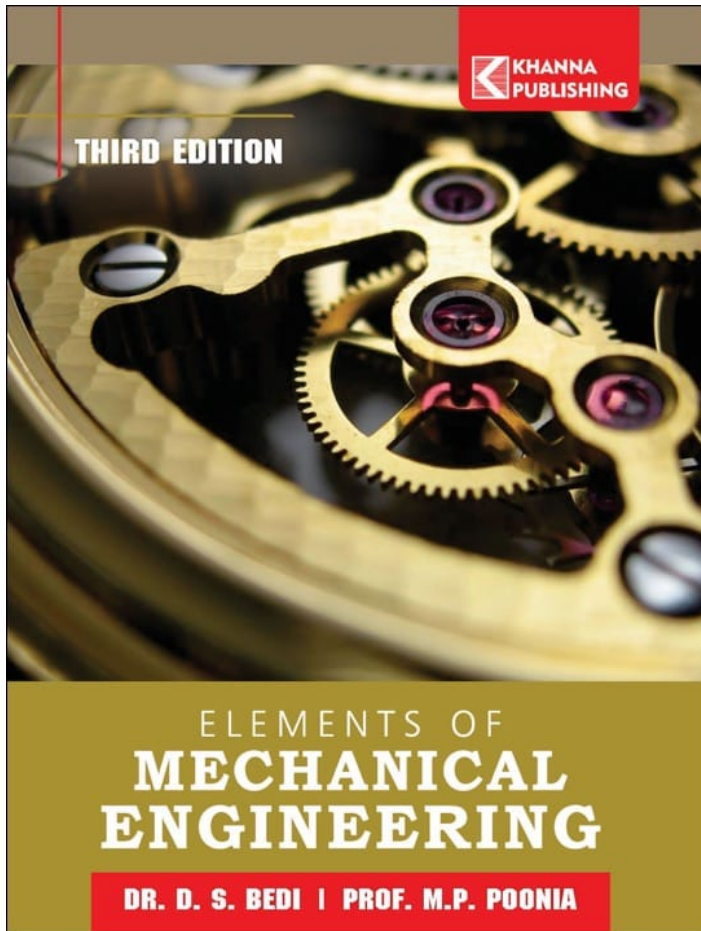
## Authors

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**Dr. D.S. Bedi** is one of the distinguished writers in India. He possesses a very excellent academic background. He had held various high positions viz. formerly Professor Emeritus at Department of Mechanical Engineering, Institute of Engineering and Technology (Punjab); Professor & Head, Dept. of Mechanical Engineering, Thapar Institute of Engineering & Technology (Punjab); Visiting Professor at Wayne State University, Detroit, MI (USA); Principal, Baba Banda Singh Bahadur Engineering College, (Punjab); Advisor-cum-Consultant at G.G.S. College of Modern Technology (Punjab); Director, Punjab College of Engineering, Technology, Punjab. **Dr. M.P. Poonia** is presently serving as Vice Chairman, All India Council for Technical Education (AICTE). Prior to this, he remained as Director, National Institute of Technical Teachers' Training and Research (NITTTR), Chandigarh. Dr. Poonia is the recipient of Bharat Mata Award conferred by Indian Institute of Oriental Heritage (an International Institute of Oriental Studies and Research, Kolkata). Dr. M. P. Poonia is specialized in the field of Mechanical Engineering. He possesses a vast experience of 30 years. He has published 80 research papers in National and International Journals and published 8 books with M/s. Khanna Book Publishing Company.

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## Elements of Mechanical Engineering

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### Product Description

The subject 'Elements of Mechanical Engineering' embraces 3 different fields of Mechanical Engineering, namely Thermodynamics, Strength of Materials and Theory of Machines. The book is written in simple and easy to understand language. The authors have ingeniously brought in situations encountered by common man in his day-to-day life, so as to generate interest in the reader for the subject which otherwise leaves him high and dry. In addition to this, every topic is supplemented with large no. of solved examples (more than 300 examples) which deals with every possible situation. At the end of each chapter, review questions have been added so that the students are made conversant with the type of compulsory questions they have to face in university exam. These are also followed by large no. of model problems.



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**Dr. D.S. Bedi** is one of the distinguished writers in India. He possesses a very excellent academic background. He had held various high positions viz. formerly Professor Emeritus at Department of Mechanical Engineering, Institute of Engineering and Technology (Punjab); Professor & Head, Dept. of Mechanical Engineering, Thapar Institute of Engineering & Technology (Punjab); Visiting Professor at Wayne State University, Detroit, MI (USA); Principal, Baba Banda Singh Bahadur Engineering College, (Punjab); Advisor-cum-Consultant at G.G.S. College of Modern Technology (Punjab); Director, Punjab College of Engineering; Technology, Punjab. **Dr. M.P. Poonia** is presently serving as Vice Chairman, All India Council for Technical Education (AICTE). Prior to this, he remained as Director, National Institute of Technical Teachers' Training and Research (NITTTR), Chandigarh. Dr. Poonia is the recipient of Bharat Mata Award conferred by Indian Institute of Oriental Heritage (an International Institute of Oriental Studies and Research, Kolkata). Dr. M. P. Poonia is specialized in the field of Mechanical Engineering. He possesses a vast experience of 30 years. He has published 80 research papers in National and International Journals and published 8 books with M/s. Khanna Book Publishing Company.

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