

Preface

I am delighted to present this treatise on “Engineering Mechanics” to admirers of the subject. Engineering mechanics is the fundamental subject for many engineering disciplines like civil, mechanical, electrical, chemical, aeronautical, naval, etc. A thorough understanding of this subject is a prerequisite for pursuing these disciplines as well as for other disciplines in their first year course as followed by most of the Indian universities.

It is a general trend that students have a dislike for this subject because of its vastness and numerical problem oriented nature. This book has been written with an aim to help the student community to overcome this fear to learn the basic concepts in an easy-to-understand manner and to apply them in numerical problems. A large number of solved examples have been provided to clearly explain the concepts under each topic. This book also addresses the need of the teachers who wish to teach the subject in depth. The theory has been provided in a lucid manner with figurative description wherever possible to clearly explain the concepts. Summary, objective type questions, theoretical questions and numerical problems with answers are provided at the end of each chapter.

The content of the book is so arranged that it would suit the standard syllabus of any university. The chapters of the book have been so written as to introduce the student to the underlying concepts, develop relevant theory, illustrate with examples and relate the subject to real world situations.

Vector approach, being widely accepted, has been used in this text. An introduction to vector algebra has been presented in the beginning chapters to know the basics. The problems in static's and dynamics can be solved by expressing the physical problems in terms of idealized models. Analysis of these models under the action of forces involves drawing free-body diagrams as the first step. For drawing of these free body diagrams, various cases that we normally come across have been dealt with in detail devoting an entire chapter.

Throughout the book, SI units have been used for all calculations. However, in dimensioning certain members, CGS system of units are also considered. I have attempted to treat the subject matter in the book in a self sufficient and integrated manner to minimize if not eliminate the need for reference to other texts as far as possible.

This book is accompanied by a comprehensive website <http://www.mhhe.com/nelson/em> designed to provide valuable resources. Instructors can access a solution manual and PowerPoint presentation with figures. Among the many resources that students can access are web links for further reading, additional objective type questions and sample question papers with solutions.

I thank my God, who has given me the strength and wisdom to write this book. I wish to express my sincere thanks to Dr U M Chaudhari, my Principal and HOD for giving me valuable guidance and suggestions. He took the pain of going through the entire manuscript and did the proof correction. The book wouldn't be in the current form had not his encouragement been there right from the beginning till its completion. It is in vain to attempt to thank one's spouse for anything, for her contribution is much more than can be acknowledged by mere words. However, if I could do it, I wish to thank my wife for her help in typing the material and her encouragement throughout the completion of this book. I also wish to remember my mother, family members and colleagues who were of real encouragement to me throughout my work.

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I would be looking forward to suggestions for further improvement of the book. You may contact me at the following email id—tmh.corefeedback@gmail.com (kindly mention the title and author name in the subject line).

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