PREFACE TO THE SECOND EDITION

The reader is advised to read the preface to the first edition. The aim and emphasis of the book have not changed: the principles underlying the mechanics of rigid and deformable solids in equilibrium have not changed.

We have resisted the temptation to increase by a great amount the material covered, or to emphasize formalism and rigor in place of the emphasis on constructing idealized models to represent actual physical situations. We believe that the reader must appreciate that engineering is the finding of solutions, i.e., the determination of answers to physical problems. The second edition has maintained the spirit and tradition of the first in this regard. We hope, too, that the book has maintained the tradition of engineering thinking, a tradition which M. A. Biot[1] refers to as the ". . . tradition of clarity, simplicity, intuitive understanding, unpretentious depth, and a shunning of the irrelevant."

Changes have been made; these changes, however, are more in the spirit of reform than of revolution. New material dealing with energy, hydrostatics, postbuckling behavior, and indicial notation has been introduced. There is also

[1] M. A. Biot, Science and the Engineer, *Appl. Mech. Rev.*, vol. 16, no. 2, pp. 89–90, February 1963.

a discussion of the role of computers in structural analysis. In this regard we have tried to emphasize that the computer can be used as a tool in the *solution* of problems. The *physical understanding* and *formulation* of a problem, however, are the most important parts of the solution, and the basic principles still reside in the three steps of Eq. (2.1). Many sections have been revised and a number of chapters reorganized to improve previous expositions.

A number of new problems have been added, and an effort has been made to show the variety of situations to which the principles contained in this book may be applied, from biology to the design of nuclear-reactor containment vessels.

We wish to thank the many readers who have submitted lists of misprints and comments and our many colleagues who have found the book useful during the last twelve years. Professor W. M. Murray is owed thanks for his contribution to Sec. 4.14.

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Preface to the Second Edition with SI Units

We have changed over sixty percent of the numerical examples and problems to the SI units. The SI system of units will take a few years to be adopted fully in the United States. For this reason, we have retained some examples and problems in the conventional English System.

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