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Theory, worked examples and problems

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PREFACE

This book is intended for use by more advanced students studying mechanics of materials at first degree level. Although the various topics are treated in such a way that they are complete and stand by themselves, it is assumed that the student has already some knowledge of the subject, as might be gained from following a lower level text, for example, *Essential Solid Mechanics* by B.W. Young (Macmillan, 1976).

The contents show how the theory of elasticity may be used to extend the range and complexity of problems covered by the general title 'Mechanics of Materials', including elastic failure.

In addition there are chapters on energy methods to remind the reader that these techniques are returning once more to prominence and an introduction to numerical methods of solution, including finite element methods.

Worked examples are included in each chapter as well as problems with answers for solution by the student. These problems have been drawn from the authors' own notes and given out to students over many years so that it is impossible to be specific about sources. We offer general acknowledgement here to those sources.

The authors wish to acknowledge the comments of help from a number of people, particularly Mr D.R.J. Mudge of Queen Mary College, during the preparation of this book.

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