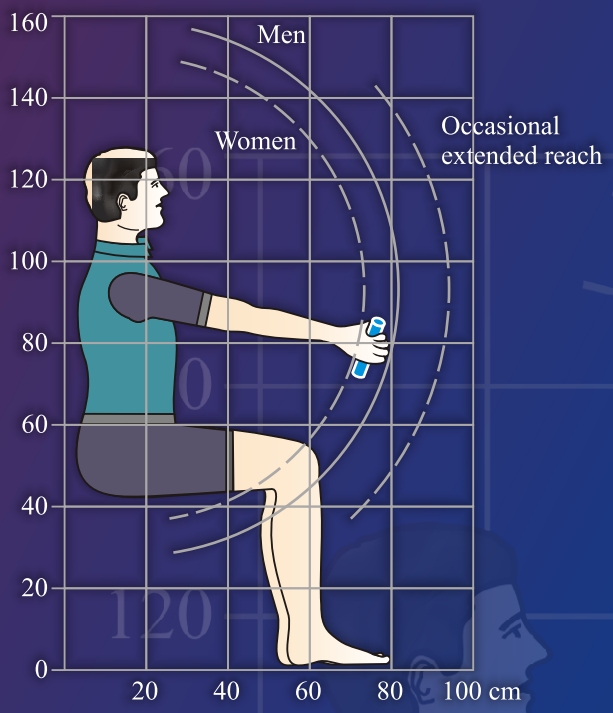

Eastern Economy Edition

Industrial Ergonomics

M.I. Khan

PHI

Industrial Ergonomics

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INDUSTRIAL ERGONOMICS
M.I. Khan

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PREFACE

The present book has been specifically prepared for the use of the students of Mechanical Engineering, Mechanical and Industrial Engineering, and Production and Industrial Engineering, pursuing a one-semester course on Industrial Ergonomics or Human Factors in Engineering. This course, although a one-semester course, in the present text it has been the author's endeavour to cover not only the course material but also some additional material that may be needed by an ergonomist or a human factors engineer or an occupational safety engineer. These engineers must have knowledge in many fields but due to the limitations imposed by the time available to cover a one-semester course, the needed course material and the other material with wide applicability have been described in sufficient depth.

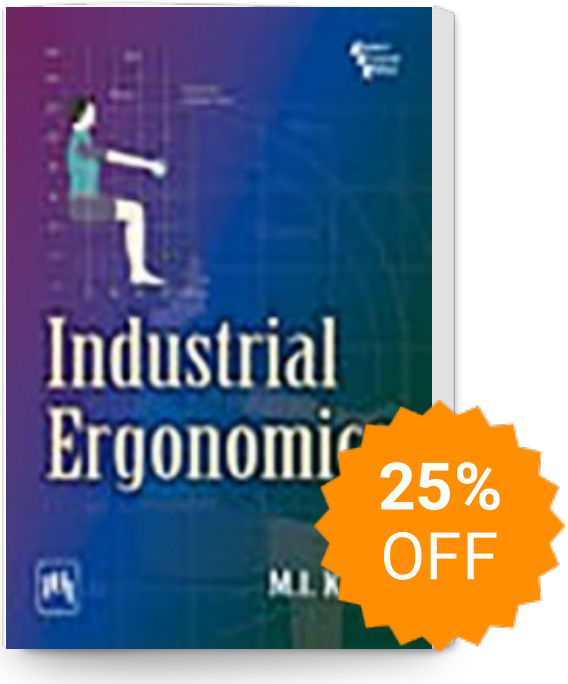
Chapter 1 explains the basic concepts, definitions, scope, importance and applications of ergonomics. Chapters 2 and 3 deal with muscular work and muscular movements along with the relevant physiological principles. Working efficiency is then explained in Chapter 4, giving optimal use of muscular power and practical guidelines for work layout. Once this background is built, anthropometry is introduced with simple examples for the design of workplace in Chapter 5.

Heavy work and physiological principles related to heavy work are then discussed with some typical examples in Chapter 6. Chapter 7 addresses the techniques of lifting loads and carrying burdens. Some very interesting topics such as skilled work, man–machine systems, and noise and vibrations have been described in Chapters 8, 9 and 10 respectively. Chapter 11 deals with indoor climate for maximum efficiency. Chapter 12 deals with mental activity and memory. References are given at the end of the text for the readers to help them in finding more details.

It is hoped that the information provided in the book will be useful to provide a basic background for the practical ergonomists in general and for the students of this subject in particular.

M.I. Khan

Industrial Ergonomics



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