

MODERN CONTROL ENGINEERING

FIFTH EDITION

Katsuhiko Ogata



Modern Control Engineering

Fifth Edition

Katsuhiko Ogata

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This book introduces important concepts in the Readers will find it to be a clear and understanding at colleges and universities. It is written for senior chemical engineering students. The reader is expected prerequisites: introductory courses on differential matrix analysis, circuit analysis, mechanics, and in

The main revisions made in this edition are a

- The use of MATLAB for obtaining responses has been increased.
- The usefulness of the computational optimization

demonstrated.

- New example problems have been added throughout the book.
- Materials in the previous edition that are of secondary importance have been dropped in order to provide space for more important topics. A chapter on Laplace transform tables, and partial-fraction expansion, has been dropped from the book. A chapter on Laplace transform tables, and partial-fraction expansion, is presented in Appendix A and Appendix B, respectively.
- A short summary of vector-matrix analysis is included to enable the reader to find the inverses of $n \times n$ matrices and to design control systems.

This edition of *Modern Control Engineering* is organized as follows: Chapter 1 presents an introduction to the subject of control systems. The organization of this book is as follows: Chapter 1 presents an introduction to the subject of control systems.