This book provides an introduction to the mathematical theory of nonlinear control systems. It contains many topics that are usually scattered among different texts, such as:

- Basic properties of control systems
- Controllability of linear and nonlinear systems
- Lie brackets and reachability
- Asymptotic stabilization
- Optimal control and the Pontryagin Maximum Principle
- Hamilton-Jacobi-Bellmann equations and viscosity solutions
- Optimal feedback synthesis

The book also presents some topics of current research, which were never before included in a textbook, including:

- Patchy feedbacks
- Impulsive control of mechanical systems

This volume will serve as an ideal textbook for graduate students. It is self-contained, with several appendices covering a wide mathematical background.

Students will be aided by its lucid exposition. More than 100 figures and 100 exercises have been inserted, helping the readers to understand the key geometric ideas and build their intuition.

For science or engineering students, this book provides a richly illustrated overview of the basic techniques and results in the theory of linear and nonlinear control. More mathematically oriented students can use this text as a useful introduction, before tackling more advanced, research oriented monographs.
The aim of this series is to provide such textbooks in applied mathematics for the student scientist. Books should be well illustrated and have clear exposition and sound pedagogy. Large number of examples and exercises at varying levels are recommended. TAM publishes textbooks suitable for advanced undergraduate and beginning graduate courses, and complements the Applied Mathematical Sciences (AMS) series, which focuses on advanced textbooks and research-level monographs. Your Shopping Cart. 0 eBook. Applied Mathematics books at E-Books Directory; files with free access on the Internet. These books are made freely available by their respective authors and publishers. The course embraces the ethos of mathematical modelling, and aims to show in a practical way how equations 'work'. (9316 views). Math Alive by Ingrid Daubechies, Shannon Hughes - Princeton University, 2008 Designed for those who haven't had college mathematics but would like to understand some applications: Cryptography; Error correction and compression; Probability and Statistics; Birth, Growth, Death and Chaos; Graph Theory; Voting and Social Choice. He said that applied maths is about using mathematics to solve real world problems — neither seeking nor avoiding mathematical difficulties. That means you've got some real world problem in mind and you don't oversimplify it so that you can solve it. You'll do whatever you have to do to come up with either a solution or an approximation. That is a nice way of giving the flavour of applied mathematics. Five Books aims to keep its book recommendations and interviews up to date. If you are the interviewee and would like to update your choice of books (or even just what you say about them) please email us at editor@fivebooks.com. Math & Statistics Science Technology. AMS Book Series. Advances in Soviet Mathematics Series Code: advsov Each volume in Advances in Soviet Mathematics is compiled by a leading specialist in a particular area of mathematics and consists of high-quality articles written by world-class mathematicians from Russia. AMS Pure and Applied Undergraduate Texts Series Code: amstext The volumes in this series are intended for undergraduate post-calculus courses and, in some cases, will provide applications in engineering and applied mathematics. The books are characterized by excellent exposition and maintain the highest standards of scholarship. Their aim is to give clear, accessible introductions to areas of current research. This series is co-published by the Clay Mathematics Institute and the AMS. Ke Han received his B.S. degree in Applied Mathematics from the University of Science and Technology of China in 2008. He graduated from the Pennsylvania State University in 2013 with a Ph.D. degree in Mathematics. He then joined the Department of Civil and Environmental Engineering at Imperial College London in 2013 as an Assistant Professor. His research interests span various areas of applied mathematics including: networks flows, vehicular traffic, crowd dynamics, control theory, partial differential equations, math finance and systems biology. Product details. Publisher: American Institute of Mathematical Sciences (August 6, 2016).