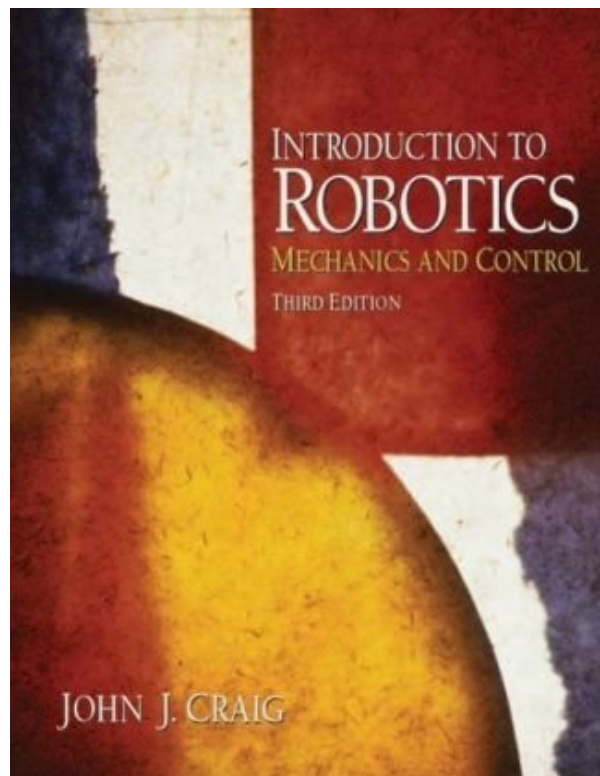
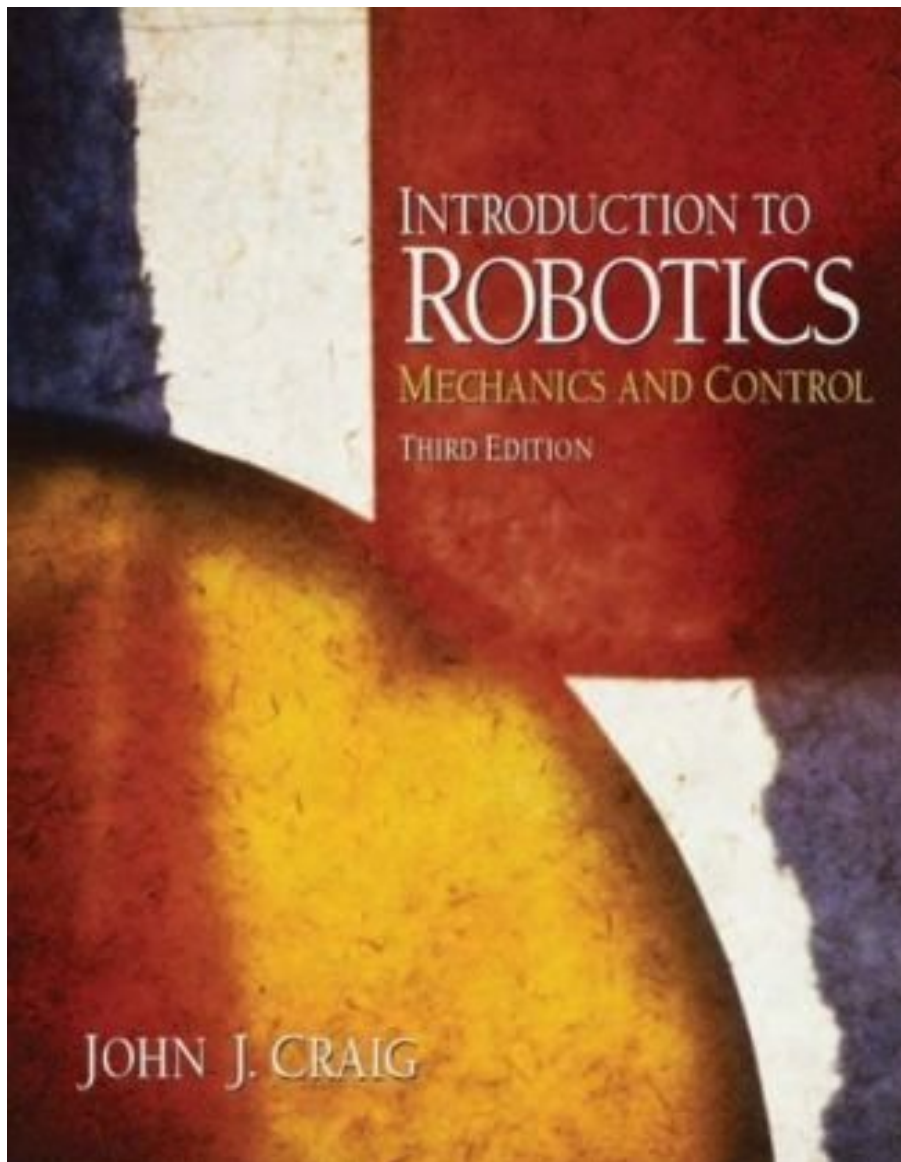


**INTRODUCTION TO ROBOTICS:
MECHANICS AND CONTROL (3RD EDITION)
BY JOHN J. CRAIG**



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By JohnnySmithGuitarist

Excellent price, super fast service, can't ask for better!

33 of 37 people found the following review helpful.

Typo ridden clunker...

By A discerning reader

The textbook attempts to cover basic kinematics, forward and backward chaining through the Euclidean approach to describe DH conventions, torque, and so forth. The first three chapters would lead one to expect an excellent textbook, and then the textbook descends into a nightmare.

The notation is cobbled together from so many different disciplines, we had to make study sheets to figure out what was said. There is no summary of formula or notation. Once there are a dozen notations in play, the typos begin. In chapter six alone, we counted over a dozen formulas with the wrong symbols or missing terms.

Even with these flaws, the book fails to deliver. The first half of the book has a theme: using transforms on DH conventions to derive position, acceleration, force and torque. Chapter seven covers a number of trajectory planning algorithms. The rest of the book adopts new notation and slowly explores control methods, stretching out simple solutions over many chapters. At the end, the reader still has no idea how to evaluate between the various control methods presented, aside from learning that more modeling is better. No alternatives are presented to the author's single thread, and the book misses concepts such as variable gains, force field collision avoidance, calibration, and Keynes notation.

There is a good topic in here screaming to get out. If you delve past the first four chapters, you will be screaming to get out.

17 of 19 people found the following review helpful.

Sloppy

By M. Woodruff

My advice to any student who finds that this book is required course material is to choose a different class. The instructor who chooses this book demonstrates very poor judgment.

Its introduction says this book "evolved from class notes." It hasn't evolved very far. It's sloppy, outdated, and badly typeset. None of the topics are adequately developed: 14 pages, for instance, is totally inadequate to develop control theory. Few of the references are more recent than 1990, and some of the text is almost laughably obsolete, like the paragraph discussing the expense of maintaining a table of sines in memory. (Craig cites a reference from 1981 when discussing the computation of trigonometric functions.)

While it describes itself as a book on robotics in general, this is really a book on the analysis of manipulator arms. If you are interested in other types of robotic systems, like semi-autonomous vehicles, prepare for disappointment. And if you are interested in the analysis of manipulator arms, prepare for disappointment anyway. This is a very difficult book to follow, due to the author's inconsistencies in notation and superficial coverage of important topics.

Ordinarily, the cues indicating that TeX has been used to prepare a book are subtle: good looking page layout and lots of well-formatted formulae. In this case, sadly, the book is peppered with obvious TeX mistakes. Nowhere is this more obvious than in the worked exercises in the back, where typos seem to have swallowed several section headings, and in one place "quad" has actually been printed where there was supposed to be a space (`\quad`). The author teaches at Stanford; if I were Donald Knuth, I would visit his office and ask him kindly to stop abusing my typesetting system.

This book reflects badly on the otherwise well-regarded Stanford robotics program, as well as on Pearson press, who should fire whoever edited this mess.

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Chapter 11 covers the field of active force control with a manipulator. That is, we discuss how to control the application of forces by the manipulator. This mode of control is important when the manipulator comes into contact with the environment around it, such as during the washing of a window with a sponge.

Chapter 12 overviews methods of programming robots, specifically the elements needed in a robot programming system, and the particular problems associated with programming industrial robots.

Chapter 13 introduces off-line simulation and programming systems, which represent the latest extension to the man-robot interface.

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J.J.C.

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