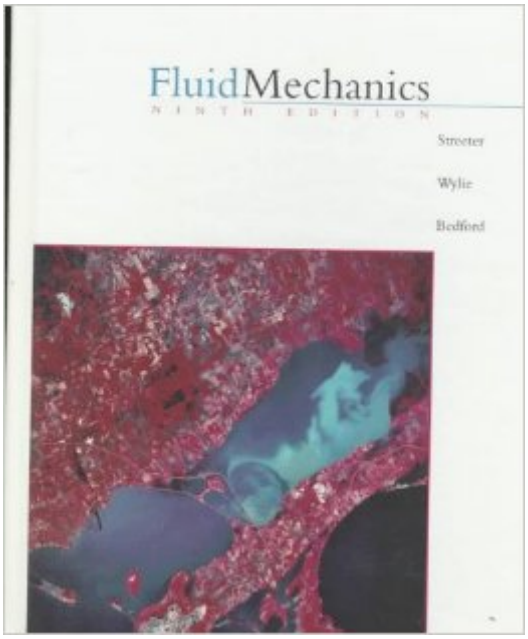
Fluid Mechanics



Synopsis

Heat and mass transport are two topics added to this edition, and the complex problem solutions are presented in Microsoft EXCEL. To compliment the text there is a new web site, containing information on computing (principally files) and MATLAB and MATHEMATICA tutorials.

Book Information

Hardcover: 752 pages

Publisher: McGraw-Hill Companies; 9 Sub edition (December 1, 1997)

Language: English

ISBN-10: 0070625379

ISBN-13: 978-0070625372

Product Dimensions: 10.3 x 8.3 x 1.3 inches

Shipping Weight: 3.3 pounds

Average Customer Review: 4.0 out of 5 starsÂ Â See all reviewsÂ (35 customer reviews)

Best Sellers Rank: #1,346,385 in Books (See Top 100 in Books) #368 inÂ Books > Engineering & Transportation > Engineering > Mechanical > Hydraulics #663 inÂ Books > Textbooks > Engineering > Aeronautical Engineering #817 inÂ Books > Science & Math > Physics > Mechanics

Customer Reviews

Pijush Kundu’s textbook has established itself as the standard in introductory fluid mechanics. While most fluid dynamics texts are based around engineering, this book is an excellent cross section for scientists hoping to gain a thorough intuition about the subject. In addition, the first few chapters offer intuitive explanations of such vector operators as div and curl. The idea of curl was a complete mystery to me until I read Kundu’s explanation of vorticity. This book is a must have for any applied scientist working in the physical world.

As a master in mechanical engineer, and working with technical education, I had studied most of the more popular textbooks on fluid mechanics before, and get used not to expect many from "new" textbooks on the subject.Although, when I came across this book, it was a little surprise. The text is very well written, and includes many advanced and interesting topics not found in other popular textbooks. It gives emphasis to qualitative explanation, and does not overwhelm you with lots of mathematics. The approach to subjects is very clever, insightful and meaningful.I dare to say it renewed my pleasure in reading, studying and teaching fluid mechanics. Thanks and congratulations to Professor Kundu.

You have to know:1- This is not an undergrad level book, so if you it is your fist exposure to the subject maybe you need another book (White, Streeter, Shames,...).2- This is not a Mathematical Fluid Mech. book but, for sure it would be a very great resource for Math student. If you need more mathematical treatment of the subject you may use (Chorin and Marsden, Childress, Elementary Fluid Dynamics by Acheson, L. D. Landau and E. M. Lifshitz, Meyer Richard E...).3- It covers all the general topics in Fluid Mech up to a good introductory level but if you need more details you need to pickup a book on that specific topic.For example: Boundary layer: H. Schlichting Turbulence: Pope or P. A. Davidson Stability: S. Chandrasekhar Geophysical Fluid Dynamics: Joseph Pedlosky Viscous flow: White Wave Mechanics: Dean and Dalrymple or Chiang C. Mei4- It flows well, the book is excellent, it almost covers the same level as incompressible flow by Panton or Batchlor's book but it is readable, almost error free, and very well written. It is the absolute best if you need a book for self study.

This is one of the best introductory books from outside the engineering community that can be used by beginners. I learned the basic equations of fluid dynamics by self-study from chapters 3-4. Chapter 3 is an excellent discussion of kinematics, taking time to carefully examine the various components of the strain rate tensor (although I prefer to call it the deformation tensor): this important topic is often ignored in other texts. Chapter 4 gives the derivation of the conservations laws (mass, momentum, and energy balance; angular momentum and entropy) including the corresponding forms for a rotating frame of reference. The development of the basic equations in Chs. 3-4 is systematic and very appealing to someone with a physics background.The other chapters are: Vorticity Dynamics, Irrotational flow, Gravity waves, Dynamic similarity, Laminar flow, Boundary layers, Instability, Turbulence, Geophysical Fluid Dynamics, Aerodynamics, and Compressible Flow. Quite a range of material, all in one place. Overall, one of the best introductory books that I've seen.

I am taking fluid mechanics in grad school and this is the text book we're using. My brain must be wired differently than everyone else I know. Several people have said that this is an amazing book; the only issue is that all the editions after the first one are full of errors.I find John D. Anderson's fluid mechanics books a lot easier to understand. In fact, I often do my reading assignments with Anderson's book right next to me, which I reference continuously. I also like Batchelor's "An Introduction to Fluid Dynamics" though only in the way it explains things. It is limited in the way of

examples and exercises (see below).Vector calculus is also explained badly, I would suggest searching online for a primer in that or use Schaum's Outlines. Schaum's also has the added benefit of worked examples and solutions to the problems.The other issue I have with this book, which is mentioned in other reviews, is that the exercises are limited and the examples are confusing and/or incorrect.All in all though, the rest of my class is pretty content with this book, leading me to believe that I may just need a different way to think about it.

This book is amazing. While accessible to anyone with a basic knowledge of physics, it is nonetheless a complete introduction to the science of fluid mechanics. It manages to give clear, complete explanations of concepts, while avoiding much of the tedious algebra and dry style of, say, Batchelor. Don't get me wrong though--Kundu is not lacking in rigor. As a first text to learn fluid mechanics from, to my knowledge, Kundu has no equal.

This book is not a great resource for a student. There are few examples, and the exercises at the end of each chapter are short and not very diverse. The exercises also have no solutions, not a big deal but the text has few examples.If you just need a reference this book is ok, but please don't teach from it!

Dmca