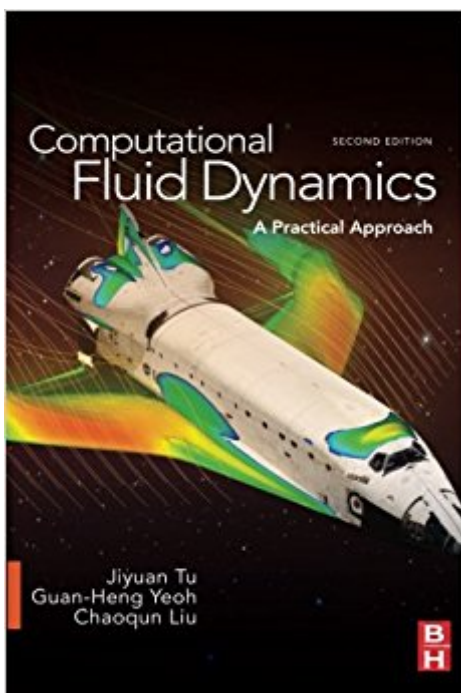


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# Computational Fluid Dynamics, Second Edition: A Practical Approach



## Synopsis

Computational Fluid Dynamics, Second Edition, provides an introduction to CFD fundamentals that focuses on the use of commercial CFD software to solve engineering problems. This new edition provides expanded coverage of CFD techniques including discretisation via finite element and spectral element as well as finite difference and finite volume methods and multigrid method. There is additional coverage of high-pressure fluid dynamics and meshless approach to provide a broader overview of the application areas where CFD can be used. The book combines an appropriate level of mathematical background, worked examples, computer screen shots, and step-by-step processes, walking students through modeling and computing as well as interpretation of CFD results. It is ideal for senior level undergraduate and graduate students of mechanical, aerospace, civil, chemical, environmental and marine engineering. It can also help beginner users of commercial CFD software tools (including CFX and FLUENT). A more comprehensive coverage of CFD techniques including discretisation via finite element and spectral element as well as finite difference and finite volume methods and multigrid method. Coverage of different approaches to CFD grid generation in order to closely match how CFD meshing is being used in industry. Additional coverage of high-pressure fluid dynamics and meshless approach to provide a broader overview of the application areas where CFD can be used. 20% new content.

## Book Information

Paperback: 456 pages

Publisher: Butterworth-Heinemann; 2 edition (November 21, 2012)

Language: English

ISBN-10: 0080982433

ISBN-13: 978-0080982434

Product Dimensions: 6 x 1 x 9 inches

Shipping Weight: 1.6 pounds (View shipping rates and policies)

Average Customer Review: 3.7 out of 5 stars 8 customer reviews

Best Sellers Rank: #159,843 in Books (See Top 100 in Books) #42 in Books > Engineering & Transportation > Engineering > Chemical > Fluid Dynamics #82 in Books > Textbooks > Engineering > Aeronautical Engineering #92 in Books > Textbooks > Engineering > Chemical Engineering

## Customer Reviews

Professor and Deputy Head, Research and Innovation, Department of Aerospace, Mechanical and

Manufacturing Engineering, Royal Melbourne Institute of Technology (RMIT) University, Australia  
Guan Heng Yeoh is an Associate Professor at the School of Mechanical and Manufacturing Engineering, UNSW, and a Senior Research Scientist at ANSTO. He is the founder and Editor of the Journal of Computational Multiphase Flows and the Group Leader of Computational Thermal-Hydraulics of OPAL Research Reactor, ANSTO. He has approximately 180 publications including 7 books, 10 book chapters, 83 journal articles, and 80 conference papers with an H-index 16 and over 800 citations. His research interests are computational fluid dynamics (CFD); numerical heat and mass transfer; turbulence modelling using Reynolds averaging and large eddy simulation; combustion, radiation heat transfer, soot formation and oxidation, and solid pyrolysis in fire engineering; fundamental studies in multiphase flows: free surface, gas-particle, liquid-solid (blood flow and nanoparticles), and gas-liquid (bubbly, slug/cap, churn-turbulent, and subcooled nucleate boiling flows); computational modelling of industrial systems of single-phase and multiphase flows. Director of the Center for Numerical Simulation and Modeling, University of Texas at Arlington

I manage data centers and computer rooms for my organization. I am an information technology professional, and not a mechanical engineer. Over the years, I have found using CFD tools invaluable in helping me to determine the state of our computing facilities with regards to maintaining proper cooling in our high-density computing environments. I had purchased other CFD books with the goal of helping me to better understand the CFD software that I use. But, this is the first book that I feel is designed for the CFD user, as opposed to the CFD developer. But, I should add, that you will need to reference Google and YouTube to refresh your algebra and calculus skills.

That's a good book for initial students in CFD. It's an applicable book without an extensive explanations in relation to differential equations. That's ideal to give you a broad overview about CFD applications!

A perfect user friendly book. Super practical. The concept is conveyed in a very simple way. Do not hesitate if u want to learn CFD in an easy way!

The book was in a good condition when it arrived

It was very helpfull for me, really like it

I use this book as textbook, looks a good one. Will wait students' response using this book in the CFD course. What I am very interested in examples in CFD applications, however, do not find much from this book, a little bit disappoint. The study guide with this book sounds interesting.

good!

Grossly overpriced. Poorly written and minimally useful. This is a total rip off! I would never buy anything from this author again.

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