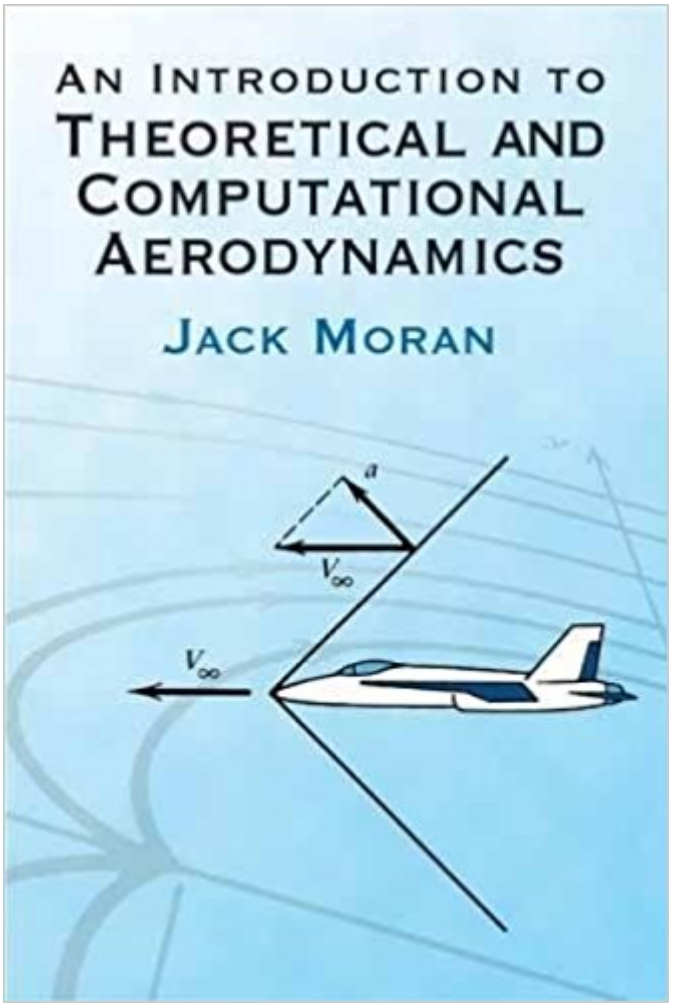
# An Introduction To Theoretical And Computational Aerodynamics (Dover Books On Aeronautical Engineering)



## Synopsis

This concise and highly readable introduction to theoretical and computational aerodynamics integrates both classical and modern developments, focusing on applying methods to actual wing design. Designed for a junior- or senior-level course and as a resource for practicing engineers, it features 221 figures.

## Book Information

Series: Dover Books on Aeronautical Engineering

Paperback: 480 pages

Publisher: Dover Publications; Reprint edition (June 17, 2010)

Language: English

ISBN-10: 0486428796

ISBN-13: 978-0486428796

Product Dimensions: 6.1 x 1 x 9.2 inches

Shipping Weight: 1.3 pounds (View shipping rates and policies)

Average Customer Review: 4.6 out of 5 stars 8 customer reviews

Best Sellers Rank: #1,081,777 in Books (See Top 100 in Books) #91 inÂ Books > Engineering & Transportation > Engineering > Aerospace > Aerodynamics #1379 inÂ Books > Science & Math > Astronomy & Space Science > Aeronautics & Astronautics #12794 inÂ Books > Science & Math > Physics

## Customer Reviews

Excellent book in presenting basic theory. Fortran programs although dated show the implementation of the equations.

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In depth without being too complicated. Great book for my plane-happy aeronautical engineer-to-be!

Very good textbook

Jack Moran’s book is an excellent introduction to the field of aerodynamics. It is written in an appealing lecture-like style which involves the reader. The explanations are clear. Moran has the ability to explain difficult concepts in an easy to understand way that enhances the reader’s

understanding of the underlying physics.The book covers a variety of topics, ranging from potential flows to supersonic flows and turbulence. The physical and mathematical modelling are clearly presented. Numerical modelling is discussed in great detail for potential flow codes (VLM, panel methods) and Navier-Stokes (finite differences). Example programs are given in the book that can be used in computer labs (although they will likely have to be rewritten in a modern language as Moran uses old style Fortran).

This book offers a very readable, interesting and up-to-date overview of aerodynamics. It is well written and well organised with clear explanations. The book is suitable for college students. It is also a fantastic tool for those who wish to teach themselves aerodynamics and have the background in physics and mathematics to handle it.Major topics include a review of basic fluid dynamics, computational fluid dynamics, incompressible irrotational flow, inviscid flow, wings of finite span, the Navier-Stokes Equations, supersonic aerodynamics, boundary layer theory, panel methods and finite difference methods.Overally, an excellent book that is well worth having.

This is one of the most easy and complete introductory-level books on aerodynamics. It covers all you need, not at a great detail like ,say, kuethe does in his book, but it is a very interesting book since it contains even FORTRAN77 codes. Actually, F77 is a pretty old language, but all the codes contained in this book are easy, so that you can easily translate them in your favorite programming language. The book contains the fundamental aspects of fluid dynamics, inviscid flows, doublets, etc. An extensive overview of the panel method is given, togetherg with other computational means for analyzing inviscid flows. Finite Difference methods and Boundary layers are treated as well, both from a theoretical and computational point of view.I would definitely recommend it.

Excellent resource for aerospace engineers. We used it for my graduate-level aerodynamics class. Very clear and consistent.

(Theoretical and Computational Chemistry Series) Fundamentals of Aerodynamics (Mcgraw-Hill Series in Aeronautical and Aerospace Engineering) Introduction to Space Dynamics (Dover Books on Aeronautical Engineering) Applied Computational Aerodynamics: A Modern Engineering Approach (Cambridge Aerospace Series) Fundamentals of Astrodynamics (Dover Books on Aeronautical Engineering) Theory of Wing Sections: Including a Summary of Airfoil Data (Dover Books on Aeronautical Engineering) Aircraft Structures (Dover Books on Aeronautical Engineering) Dynamics of Atmospheric Flight (Dover Books on Aeronautical Engineering) Elements of Gas Dynamics (Dover Books on Aeronautical Engineering) Helicopter Theory (Dover Books on Aeronautical Engineering) Foundations of Aerodynamics: Bases of Aerodynamics Design Philosophical And Theoretical Perspectives For Advanced Nursing Practice (Cody, Philosophical and Theoretical Perspectives for Advances Nursing Practice) Theory of Lift: Introductory Computational Aerodynamics in MATLAB/Octave The Basics of Theoretical and Computational Chemistry Introduction to Flight (Mcgraw-Hill Series in Aeronautical and Aerospace Engineering)