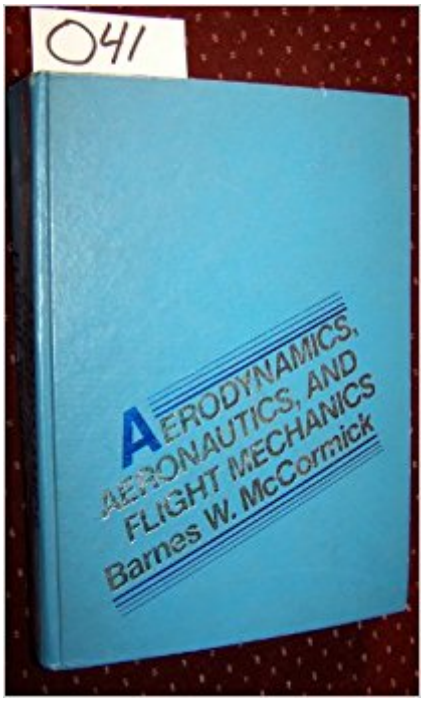
Aerodynamics, Aeronautics And Flight Mechanics



Synopsis

A single, comprehensive, in-depth treatment of both basic, and applied modern aerodynamics. Covers the fluid mechanics and aerodynamics of incompressible and compressible flows, with particular attention to the prediction of lift and drag characteristics of airfoils and wings and complete airplane configurations. Following an introduction to propellers, piston engines, and turbojet engines, methods are presented for analyzing the performance of an airplane throughout its operating regime. Also covers static and dynamic longitudinal and lateral-directional stability and control. Includes lift, drag, propulsion and stability and control data, numerical methods, and working graphs.

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Customer Reviews

A New Edition of the Most Effective Text/Reference in the Field! Aerodynamics, Aeronautics, and Flight Mechanics, Second Edition Barnes W. McCormick, Pennsylvania State University 57506-2 When the first edition of Aerodynamics, Aeronautics, and Flight Mechanics was published, it quickly became one of the most important teaching and reference tools in the field. Not only did generations of students learn from it, they continue to use it on the job-the first edition remains one of the most well-thumbed guides you'll find in an airplane company. Now this classic text/reference is available in a bold new edition. All new material and the interweaving of the computer throughout make the Second Edition even more practical and current than before! A New Edition as Complete and Applied as the First Both analytical and applied in nature, Aerodynamics, Aeronautics, and Flight

Mechanics presents all necessary derivations to understand basic principles and then applies this material to specific examples. You'll find complete coverage of the full range of topics, from aerodynamics to propulsion to performance to stability and control. Plus, the new Second Edition boasts the same careful integration of concepts that was an acclaimed feature of the previous edition. For example, Chapters 9, 10, and 11 give a fully integrated presentation of static, dynamic, and automatic stability and control. These three chapters form the basis of a complete course on stability and control. New Features You'll Find in the Second Edition * A new chapter on helicopter and V/STOL aircraft- introduces a phase of aerodynamics not covered in most current texts * Even more material than the previous edition, including coverage of stealth airplanes and delta wings * Extensive use of the computer throughout- each chapter now contains several computer exercises * A computer disk with programs written by the author is available --This text refers to the Paperback edition.

In 1978-9 worked through parts of Newman's 'Marine Hydrodynamics', corresponding treatments of lift and drag on a hydrofoil in Landau-Lifshits' Hydrodynamics, and Milne-Thompson's 'Theoretical Aerodynamics'. All these books complement and reenforce each other. Newman, like L-L, works from the equations of hydrodynamics while M-T bases his treatment largely on complex velocity potentials (for very high aspect ratio foils). I have only recently discovered McCormick's book and recommend it heartily as well because of it's emphasis on practicality and simple approximations (a 4-vortex approximation to a wing, e.g., very pretty!), and because he does not hand-wave but instead covers all the derivations thoroughly, if simply. I can understand that some engineers may complain about this book, but Prandtl would not have been one of them, I think.

Has material that no other book covers. I wish the book was longer and had examples. However, as is it will be of great help to engineering students and researchers. I particularly enjoy the focus this book has to computer programming for aerospace engineering

Had to buy this book for an Aircraft Performance class. This book is straight trash. For all homework assignments I used three books: John Anderson's Fund. of Aerodynamics, James John's Gas Dynamics book, and a Fluid Mechanics book I had from the previous semester. Notice how I didn't use this book for anything beside the problem statements...

We use this in class, lacks detailed explanations, examples, real life applications, theory derivations,

and any kind of explanation. if you are looking for a good book go with White’s book, has the same theory, but you will actually learn how to apply it.

As others have said this book is whatever. The author seems apathetic and looks down on students in general. It’s as if someone made him write this book against his will.

I was surprised to find negative reviews on this item, since I’ve been using it a lot in my work; then I’ve noticed people giving the lowest rate found it terrible in their lessons-maybe they are right. I can’t imagine learning from these book, it is more like a reference for engineers and researchers already working on these topics. I work deriving drag and lift coefficients for gliding objects in a fluid (not necessarily air) and this book has been very helpful-specially regarding the circulation theory.The book does mention some historical landmarks in the development of aviation, and some rationale about interpreting your data. When you see not too much basic theory explained, but still lot of principles, datasheets and formula explained, then you can conclude this is a reference book for workers, not a text book for students. Basic theory, when mentioned, is more like a reminder, not like for a newcomer to understand it in the first place.If you see a phrase like: "don’t fudge your data, it maybe right" (Wilburg Wright, on the shape of the lift coefficient curve); students may say: "yeah, be honest, don’t fudge your data-I don’t need a book to tell me this". However, researchers, who have to establish a mathematical model for the first time, will quickily recognize the capital importance of that little phrase.I’m giving 4 stars, this book IS good, although it have some pedagogic flaws for students.

As I read in another review, the quality of the book depends on what you need it for. Although it covers a breadth of topics, it is poor for learning from. There are misprints and not enough examples. It also annoyed me that the derivations weren’t always worked out completely, sometimes introducing other variables without explaination. You’d have to have read and absorbed all the previous chapters to make those leaps on your own. There is a very good list of notations in the back, however, and the author is consistent with it which somewhat lessens this problem. A pet peeve from the book, however, is how the author assigns writing computer programs as problems, and then refers to those programs as derivations of other principles later in the book. For a better introduction on aeronautical principles, I recommend Anderson’s text, which is an easy read and is very clear in its derivations.

I bought this book hoping it would be better than the late edition. The books is once again very theoretical, dry-cut models that at times drifts you away from hand on experiments. It also lacks thorough explanations or real life examples, theory derivations, and any sort of useful explanation. If you are looking for a good book go with White's book, has the same theory, but you will actually learn how to apply it.Any reputable university (UCLA, MIT, Cal Tech, SDSB...) science library carry a lot of aerodynamics books that by far can help you understand the concept with more applicable scenarios.

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