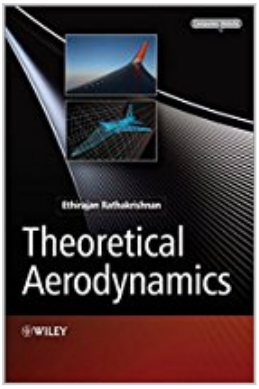

Theoretical Aerodynamics

By Ethirajan Rathakrishnan

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Theoretical Aerodynamics is a user-friendly text for a full course on theoretical aerodynamics. The author systematically introduces aerofoil theory, its design features and performance aspects, beginning with the basics required, and then gradually proceeding to higher level. The mathematics involved is presented so that it can be followed comfortably, even by those who are not strong in mathematics. The examples are designed to fix the theory studied in an effective manner. Throughout the book, the physics behind the processes are clearly explained. Each chapter begins with an introduction and ends with a summary and exercises.

This book is intended for graduate and advanced undergraduate students of Aerospace Engineering, as well as researchers and Designers working in the area of aerofoil and blade design.

- Provides a complete overview of the technical terms, vortex theory, lifting line theory, and numerical methods
- Presented in an easy-to-read style making full use of figures and illustrations to enhance understanding, and moves well simpler to more advanced topics
- Includes a complete section on fluid mechanics and thermodynamics, essential background topics to the theory of aerodynamics
- Blends the mathematical and physical concepts of design and performance aspects of lifting surfaces, and introduces the reader to the thin aerofoil theory, panel method, and finite aerofoil theory
- Includes a Solutions Manual for end-of-chapter exercises, and Lecture slides on the book's Companion Website

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Editorial Review

Review

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"The main objective of the book is to cover the classical theory for inviscid flow using exact solutions of the linear equations or approximations to the equations with, for example, panel methods and thin aerofoil theory. This provides a good grounding for the student in the basic properties of the fluid flow and results can be achieved by simple calculation." (The Aeronautical Journal 2015)

From the Back Cover

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Professor Rathakrishnan studied Aerodynamics, Propulsion and Aircraft Structure at Madras Institute of Technology, and obtained his PhD in Gas Dynamics in 1986. He is the founder of the High Speed Jet

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