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Nota di contenuto	Theoretical Aerodynamics; Contents; About the Author; Preface; 1 Basics; 1.1 Introduction; 1.2 Lift and Drag; 1.3 Monoplane Aircraft; 1.3.1 Types of Monoplane; 1.4 Biplane; 1.4.1 Advantages and Disadvantages; 1.5 Triplane; 1.5.1 Chord of a Profile; 1.5.2 Chord of an Aerofoil; 1.6 Aspect Ratio; 1.7 Camber; 1.8 Incidence; 1.9 Aerodynamic Force; 1.10 Scale Effect; 1.11 Force and Moment Coefficients; 1.12 The Boundary Layer; 1.13 Summary; Exercise Problems; Reference; 2 Essence of Fluid Mechanics; 2.1 Introduction; 2.2 Properties of Fluids; 2.2.1 Pressure; 2.2.2 Temperature; 2.2.3 Density 2.2.4 Viscosity2.2.5 Absolute Coefficient of Viscosity; 2.2.6 Kinematic Viscosity Coefficient; 2.2.7 Thermal Conductivity of Air; 2.2.8 Compressibility; 2.3 Thermodynamic Properties; 2.3.1 Specific Heat; 2.3.2 The Ratio of Specific Heats; 2.4 Surface Tension; 2.5 Analysis of Fluid Flow; 2.5.1 Local and Material Rates of Change; 2.5.2 Graphical Description of Fluid Motion; 2.6 Basic and Subsidiary Laws; 2.6.1 System and Control Volume; 2.6.2 Integral and Differential Analysis; 2.6.3 State Equation; 2.7 Kinematics of Fluid Flow; 2.7.1 Boundary Layer Thickness; 2.7.2 Displacement Thickness

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4.9 Transformation of Circle to Circular Arc

Sommario/riassunto

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. Throughou