Aerodynamics for engineering students /

Houghton, E. L. (Edward Lewis)

Butterworth-Heinemann, 2012

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Monografía

Already one of the leading course texts on aerodynamics in the UK, the sixth edition welcomes a new US-based author team to keep the text current. The sixth edition has been revised to include the latest developments in compressible flow, computational fluid dynamics, and contemporary applications. Computational methods have been expanded and updated to reflect the modern approaches to aerodynamic design and research in the aeronautical industry and elsewhere, and new examples of 'the aerodynamics around you' have been added to link theory to practical understanding. NEW: Expanded coverage of compressible flow NEW: MATLAB(r) exercises throughout, to give students practice is using industry-standard computational tools. m-files available for download from companion website. NEW: contemporary applications and examples help students see the link between everyday physical examples of aerodynamics and the application of aerodynamic principles to aerodynamic design. NEW: additional examples and end of chapter exercises provide more problem-solving practice for students NEW: improved teaching support with powerpoint slides, solutions manual, m-files, and other resources to accompany the text

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Mención de serie: Engineering professional collection

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Contenido: Chapter 1: Basic Concepts and Definitions Chapter 2: Governing equations of fluid mechanics Chapter 3: Potential flow Chapter 4: Two-dimensional wing theory Chapter 5: Finite wing theory Chapter 6: Compressible flow: Part I Chapter Preface -- ch. 1.) Basic concepts and definitions -- ch. 2.) Funamental equations of fluid mechanics -- ch. 3.) Potential flow -- ch. 4.) Two-dimensional wing theory -- ch. 5.) Wing theory -- ch. 6.) Compressible flow -- ch. 7.) Airfoils and wings in compressible flow -- ch. 8.) Viscous flow and boundary layers --

ch. 9.) Flow control and wing design -- ch. 10. Propulsion devices --) appendix A.) Symbols and notation -- Appendix B.) [Table : altitute (feet), temperature (Rankine), temperature (Fahrenheit), pressure (psl), density (slug /ft^3)] -- appendix C.) A solution of integrals of the type of Glauert's integral -- appendix D.) Conversion of Imperial units to Système international (SI) units -- Bibliography

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