

1. Record Nr.	UNINA9910454417303321
Titolo	Introduction to aeronautics [[electronic resource]] : a design perspective // Steven A. Brandt ... [et al.]
Pubbl/distr/stampa	Reston, Va., : American Institute of Aeronautics and Astronautics, c2004
ISBN	1-60086-072-9
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (530 p.)
Collana	AIAA education series
Altri autori (Persone)	BrandtSteven A. <1953->
Disciplina	629.134/1
Soggetti	Airplanes - Design and construction Aeronautics Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Description based upon print version of record.
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	""Cover""; ""Title""; ""Copyright""; ""Foreword to the Second Edition""; ""Foreword to the First Edition""; ""Table of Contents""; ""Preface""; ""Acknowledgments""; ""Nomenclature""; ""Chapter 1. Design Thinking""; ""1.1 Introduction""; ""1.2 Design Method""; ""1.3 Design Example""; ""1.4 Design and Aeronautics""; ""1.5 Brief History of Aircraft Design""; ""1.6 Conclusion""; ""1.7 Chapter Summary""; ""1.8 More Details""; ""References""; ""Problems""; ""Chapter 2. Operating Environment""; ""2.1 Design Motivation""; ""2.2 Characteristics of the Atmosphere""; ""2.3 Pressure Measurement"" ""2.4 Standard Atmosphere"" ""2.5 Common Uses of the Standard Atmosphere""; ""2.6 Chapter Summary""; ""2.7 More Detailsa€?Molecular Collisions and Aerodynamics""; ""Reference""; ""Problems""; ""Chapter 3. Aerodynamics and Airfoils""; ""3.1 Design Motivation""; ""3.2 Basic Aerodynamics""; ""3.3 Basic Aerodynamics Applications""; ""3.4 Viscous Flow""; ""3.5 Airfoil Characteristics""; ""3.6 Chapter Summary""; ""3.7 More Details""; ""References""; ""Problems""; ""Chapter 4. Wings and Airplanes""; ""4.1 Design Motivation""; ""4.2 Wings""; ""4.3 High-Lift Devices""; ""4.4 Whole Aircraft Lift"" ""4.5 Whole Aircraft Drag and Drag Polar"" ""4.6 Mach-Number Effects""; ""4.7 Chapter Summary""; ""4.8 More Details""; ""4.9 Whole Aircraft Analysis Example""; ""References""; ""Problems""; ""Chapter 5.

Performance"; "5.1 Design Motivation"; "5.2 Equations of Motion";
"5.3 Propulsion"; "5.4 Drag Curves"; "5.5 Lift-to-Drag Ratio"; "5.6
Power Curves"; "5.7 Curve Shifts"; "5.8 Glides"; "5.9 Climbs";
"5.10 Range and Endurance"; "5.11 Takeoff and Landing"; "5.12
Turns"; "5.13 Va Diagrams"; "5.14 Energy Height and Specific
Excess Power"; "5.15 Chapter Summary"
"5.16 More Details? Maneuverability Diagrams and Constraint
Analysis""5.17 Performance Analysis Example"; "References";
"Problems"; "Chapter 6. Stability and Control"; "6.1 Design
Motivation"; "6.2 Language"; "6.3 Longitudinal Control Analysis";
"6.4 Longitudinal Stability"; "6.5 Dynamic Longitudinal Stability";
"6.6 Lateral-Directional Stability"; "6.7 Dynamic Lateral-Directional
Stability"; "6.8 Chapter Summary"; "6.9 More Details? Calculating
Stability Parameters"; "6.10 Stability and Control Analysis Example: F-
16A and F-16C"; "Reference"; "Problems"
"Chapter 7. Structures""7.1 Design Motivation"; "7.2 Solid
Mechanics"; "7.3 Types of Stress"; "7.4 Loads"; "7.5 Structural
Layout"; "7.6 Materials"; "7.7 Component Sizing"; "7.8 Structural
Sizing Example"; "7.9 Weight Estimates"; "7.10 Finite Element
Analysis"; "7.11 Chapter Summary"; "References"; "Problems";
"Chapter 8. Sizing"; "8.1 Design Motivation"; "8.2 Internal Layout";
"8.3 Structures and Weight"; "8.4 Geometry Constraints"; "8.5
Mission Analysis"; "8.6 Sizing Equation"; "8.7 Weight Fraction
Method"; "8.8 Weight and Balance"
"8.9 Mission Analysis and Sizing Example"
