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Fundamentals of Aerodynamics McGraw-Hill Science, Engineering & Mathematics *In keeping with the successful previous edition, Anderson carries over the second edition content into the third edition while adding selected topics and examples. New coverage on the Computational Fluid Dynamics (CFD) and new illustrations to help the students to understand the basic concepts. More than a dozen "design boxes" are included to help students focus on the practical applications.* **Computational Fluid Dynamics An Introduction** Springer Science & Business Media *An outgrowth of a lecture series given at the Von Karman Institute for Fluid Dynamics.* **Introduction to Flight** McGraw-Hill College *Blending history and biography with discussion of engineering concepts, and the development of flight through this perspective, this text includes new content covering the last days of the Concorde, the centennial of the Wright Brothers' flight, and the Mariner and Voyager 2 missions.* **Exterior Ballistics** Xlibris Corporation *The noteworthy findings and innovative methods of predicting projectile trajectory, introduced in my books Exterior Ballistics: A New Approach (EBNA), Xlibris, 2010; and Exterior Ballistics with Applications (EBA3e), Xlibris, third edition, December 2011, require a methodical approach and further development. As result, the amateurs and professionals interested in exterior ballistics of firearms, and especially in long-range shooting with small arms, have a new book, Exterior Ballistics: The Remarkable Methods (EBRM), that aims to enrich the foundations of modern exterior ballistics and to lessen the complexity of physics and mathematics techniques in use. Exterior Ballistics: The Remarkable Methods is a book that combines and develops further the methods introduced in EBA3e, EBNA, and in the Exterior Ballistics of Small Arms (EBSA, Xlibris 2009). The foundations of the book are mainly the findings and the innovative ballistics methods presented in EBA3e and EBNA. The remarkable methods of exterior ballistics presented in this new book include: The methods of determining the function of resistance $G(v)$ of a given bullet ($i=1$) using range tables, or the experimental data measurements of three or four coordinates at the points of projectile impact. The model of "Tangent Law of Trajectory Refraction" and the related set of formulas that we use to study the trajectories of projectiles in nonstandard atmosphere. Series expansion method and the techniques of (second to sixth order) parabolas we employ to predict with great accuracy the projectile trajectory. The exceptional Siacci's methods that we apply as well for the projectile trajectory in nonstandard atmosphere and in inclined shooting combined with the tangent law of trajectory refraction. It is important to note that using the similarity laws of fluid dynamics we have obtained the "tangent law of projectile refraction," which represents a progress with respect to "Newton Snell's law" on projectile refraction. For better understanding of the information presented in the book, the reader should refer to my three preceding books on exterior ballistics, already published by Xlibris, although most of the material is self-contained and clear enough to be accessed and assimilated by a wide range of readers. The system of units used in the book is the International System (SI). For readers that are unfamiliar with the SI system it is not difficult to become accustomed and use the materials presented in the book to benefit from the simple illustrations, exercises, and PC programs that, at the same time, give answers to many problems encountered in practice. My studies and writing work in exterior ballistics intend to find new and simple mathematical models and methods to predict the elements of the projectile trajectory. I believe that I have achieved some good results, which need to be further developed. George Klimi, PhD New York, December 2012 gklimi@pace.edu iven24@aol.com gklimi@citytech.cuny.edu* **Engineering Education Basic Aerodynamics Incompressible Flow** Cambridge University Press *In the rapidly advancing field of flight aerodynamics, it is especially important for students to master the fundamentals. This text, written by renowned experts, clearly presents the basic concepts of underlying aerodynamic prediction methodology. These concepts are closely linked to physical principles so that they are more readily retained and their limits of applicability are fully appreciated. Ultimately, this will provide students with the necessary tools to confidently approach and solve practical flight vehicle design problems of current and future interest. This book is designed for use in courses on aerodynamics at an advanced undergraduate or graduate level. A comprehensive set of exercise problems is included at the end of each chapter.* **Aircraft Performance & Design** McGraw-Hill Science Engineering *Written by one of the most successful aerospace authors, this new book develops aircraft performance techniques from first principles and applies them to real airplanes. It also address a philosophy of, and techniques for aircraft design. By developing and discussing these two subjects in a single text, the author captures a degree of synergism not found in other texts. The book is written in a conversational style, a trademark of all of John Anderson's texts, to enhance the readers' understanding.* **Introduction to Aircraft Flight Mechanics** AIAA *Based on a 15-year successful approach to teaching aircraft flight mechanics at the US Air Force Academy, this text explains the concepts and derivations of equations for aircraft flight mechanics. It covers aircraft performance, static stability, aircraft dynamics stability and feedback control.* **Hypersonic and High Temperature Gas Dynamics** AIAA *This book is a self-contained text for those students and readers interested in learning hypersonic flow and high-temperature gas dynamics. It assumes no prior familiarity with either subject on the part of the reader. If you have never studied hypersonic and/or high-temperature gas dynamics before, and if you have never worked extensively in the area, then this book is for you. On the other hand, if you have worked and/or are working in these areas, and you want a cohesive presentation of the fundamentals, a development of important theory and techniques, a discussion of the salient results with emphasis on the physical aspects, and a presentation of modern thinking in these areas, then this book is also for you. In other words, this book is designed for two roles: 1) as an effective classroom text that can be used with ease by the instructor, and understood with ease by the student; and 2) as a viable, professional working tool for engineers, scientists, and managers who have any contact in their jobs with hypersonic and/or high-temperature flow.* **A Brief Introduction To Fluid Mechanics** John Wiley & Sons *Based on the authors' highly successful text Fundamentals of Fluid Mechanics, A Brief Introduction to Fluid Mechanics, 5th Edition is a streamlined text, covering the basic concepts and principles of fluid mechanics in a modern style. The text clearly presents basic analysis techniques and addresses practical concerns and applications, such as pipe flow, open-channel flow, flow measurement, and drag and lift. Extra problems in every chapter including open-ended problems, problems based on the accompanying videos, laboratory problems, and computer problems emphasize the practical application of principles. More than 100 worked examples provide detailed solutions to a variety of problems.* **Mechanics of Aircraft Structures** John Wiley & Sons *Mechanics of Aircraft Structures, Second Edition is the revised update of the original bestselling textbook about aerospace engineering. This book covers the materials and analysis tools used for aircraft structural design and mechanics in the same easy to understand manner. The new edition focuses on three levels of coverage driven by recent advances in industry: the increase in the use of commercial finite element codes require an improved capability in students to formulate the problem and develop a judgement of the accuracy of the numerical results; the focus on fracture mechanics as a tool in studying damage tolerance and durability has made it necessary to introduce students at the undergraduate level to this subject; a new class of materials including advanced composites, are very different from the traditional metallic materials, requiring students and practitioners to understand the advantages the new materials make possible. This new edition will provide more homework problems for each chapter, more examples, and more details in some of the derivations.* **Flight Theory and Aerodynamics A Practical Guide for Operational Safety** John Wiley & Sons *The pilot's guide to aeronautics and the complex forces of flight Flight Theory and Aerodynamics is the essential pilot's guide to the physics of flight, designed specifically for those with limited engineering experience. From the basics of forces and vectors to craft-specific applications, this book explains the mechanics behind the pilot's everyday operational tasks. The discussion focuses on the concepts themselves, using only enough algebra and trigonometry to illustrate key concepts without getting bogged down in complex calculations, and then delves into the specific applications for jets, propeller crafts, and helicopters. This updated third edition includes new chapters on Flight Environment, Aircraft Structures, and UAS-UAV Flight Theory, with updated craft examples, component photos, and diagrams throughout. FAA-aligned questions and regulatory references help reinforce important concepts, and additional worked problems provide clarification on complex topics. Modern flight control systems are becoming more complex and more varied between aircrafts, making it essential for pilots to understand the aerodynamics of flight before they ever step into a cockpit. This book provides clear explanations and flight-specific examples of the physics every pilot must know. Review the basic physics of flight Understand the applications to specific types of aircraft Learn why takeoff and landing entail special considerations Examine the force concepts behind stability and control As a pilot, your job is to balance the effects of design, weight, load factors, and gravity during flight maneuvers, stalls, high- or low-speed flight, takeoff and landing, and more. As aircraft grow more complex and the controls become more involved, an intuitive grasp of the physics of flight is your most valuable tool for operational safety. Flight Theory and Aerodynamics is the essential resource every pilot needs for a clear understanding of the forces they control.* **Orbital Mechanics for Engineering Students** Elsevier *Orbital Mechanics for Engineering Students, Second Edition, provides an introduction to the basic concepts of space mechanics. These include vector kinematics in three dimensions; Newton's laws of motion and gravitation; relative motion; the vector-based solution of the classical two-body problem; derivation of Kepler's equations; orbits in three dimensions; preliminary orbit determination; and orbital maneuvers. The book also covers relative motion and the two-impulse rendezvous problem; interplanetary mission design using patched conics; rigid-body dynamics used to characterize the attitude of a space vehicle; satellite attitude dynamics; and the characteristics and design of multi-stage launch vehicles. Each chapter begins with an outline of key concepts and concludes with problems that are based on the material covered. This text is written for undergraduates who are studying orbital mechanics for the first time and have completed courses in physics, dynamics, and mathematics, including differential equations and applied linear algebra. Graduate students, researchers, and experienced practitioners will also find useful review materials in the book. NEW: Reorganized and improved discussions of coordinate systems, new discussion on perturbations and quaternions NEW: Increased coverage of attitude dynamics, including new Matlab algorithms and examples in chapter 10 New examples and homework problems* **Fundamentals of Fluid Mechanics** Are You Ready to See Fluid Mechanics In Action? This text comes with a free Fluid Mechanics Phenomena CD-ROM that brings fluid mechanics to life! It contains a series of short video segments that illustrate various aspects of real-world fluid mechanics. Many of the segments show how fluid motion is related to familiar devices and everyday experiences. Each segment also clearly indicates the key fluid mechanics topic being demonstrated and provides a description of the content. Throughout the text you'll find a special video icon that will let you know when it is appropriate to view a particular video clip. The numbering system will indicate which clip is relevant to the fluid mechanics concepts and theory under discussion. Also Available: The Student Solutions Manual-Easy-to-use study tool with detailed solutions to Review Problems found at the end of each chapter in the text. Wiley: Creating the Future of Engineering Education **Computational Fluid Mechanics and Heat Transfer, Second Edition** CRC Press *This comprehensive text provides basic fundamentals of computational theory and computational methods. The book is divided into two parts. The first part covers material fundamental to the understanding and application of finite-difference methods. The second part illustrates the use of such methods in solving different types of complex problems encountered in fluid mechanics and heat transfer. The book is replete with worked examples and problems provided at the end of each chapter.* **DYNAMICS OF FLIGHT Stability and Control Fundamentals of Aircraft Structural Analysis** McGraw-Hill Science, Engineering & Mathematics *The author uses practical applications and real aerospace situations to illustrate concepts in the text covering modern topics including landing gear analysis, tapered beams, cutouts and composite materials. Chapters are included on statically determinate and statically indeterminate structures to serve as a review of material previously learned. Each chapter in the book contains methods and analysis, examples illustrating methods and homework problems for each topic.* **Aerodynamics, Aeronautics, and Flight Mechanics** *Designed for introductory courses in aerodynamics, aeronautics and flight mechanics, this text examines the aerodynamics, propulsion, performance, stability and control of an aircraft. Major topics include lift, drag, compressible flow, design information, propellers, piston engines, turbojets, statics, dynamics, automatic stability and control. Two new chapters have been added to this edition on helicopters, V/STOL aircraft, and automatic control.* **Wind Turbines Theory and Practice** Cambridge University Press *Explains the key aspects of wind turbine technology and its application in a single readable text.* **Joyce in the Belly of the Big Truck; Workbook Modern Compressible Flow With Historical Perspective** McGraw-Hill Science, Engineering & Mathematics *Modern Compressible Flow, Second Edition, presents the fundamentals of classical compressible flow along with the latest coverage of modern compressible flow dynamics and high-temperature flows. The second edition maintains an engaging writing style and offers philosophical and historical perspectives on the topic. It also continues to offer a variety of problems-providing readers with a practical understanding. The second edition includes the latest developments in the field of modern compressible flow.* **Aerodynamics for Engineers** Pearson Higher Ed *This is the eBook of the printed book and may not include any media, website access codes, or print supplements that may come packaged with the bound book. For junior/senior and graduate-level courses in Aerodynamics, Mechanical Engineering, and Aerospace Engineering. This text also serves as a useful reference for professionals in the aeronautics industry. z Revised to reflect the technological advances and modern application in Aerodynamics, the Sixth Edition of Aerodynamics for Engineers merges fundamental*

fluid mechanics, experimental techniques, and computational fluid dynamics techniques to build a solid foundation for readers in aerodynamic applications from low-speed through hypersonic flight. It presents a background discussion of each topic followed by a presentation of the theory, and then derives fundamental equations, applies them to simple computational techniques, and compares them to experimental data. **Flight Vehicle Aerodynamics** MIT Press An overview of the physics, concepts, theories, and models underlying the discipline of aerodynamics. This book offers a general overview of the physics, concepts, theories, and models underlying the discipline of aerodynamics. A particular focus is the technique of velocity field representation and modeling via source and vorticity fields and via their sheet, filament, or point-singularity idealizations. These models provide an intuitive feel for aerodynamic flow-field behavior and are the basis of aerodynamic force analysis, drag decomposition, flow interference estimation, and other important applications. The models are applied to both low speed and high speed flows. Viscous flows are also covered, with a focus on understanding boundary layer behavior and its influence on aerodynamic flows. The book covers some topics in depth while offering introductions and summaries of others. Computational methods are indispensable for the practicing aerodynamicist, and the book covers several computational methods in detail, with a focus on vortex lattice and panel methods. The goal is to improve understanding of the physical models that underlie such methods. The book also covers the aerodynamic models that describe the forces and moments on maneuvering aircraft, and provides a good introduction to the concepts and methods used in flight dynamics. It also offers an introduction to unsteady flows and to the subject of wind tunnel measurements. The book is based on the MIT graduate-level course "Flight Vehicle Aerodynamics" and has been developed for use not only in conventional classrooms but also in a massive open online course (or MOOC) offered on the pioneering MOOC platform edX. It will also serve as a valuable reference for professionals in the field. The text assumes that the reader is well versed in basic physics and vector calculus, has had some exposure to basic fluid dynamics and aerodynamics, and is somewhat familiar with aerodynamics and aeronautics terminology. **Munson, Young and Okiishi's Fundamentals of Fluid Mechanics** John Wiley & Sons Original edition: Munson, Young, and Okiishi in 1990. **Solutions Manual to Accompany Computational Fluid Dynamics The Basics with Applications** McGraw-Hill Europe **Wind Energy Explained Theory, Design and Application** John Wiley & Sons Wind energy's bestselling textbook- fully revised. This must-have second edition includes up-to-date data, diagrams, illustrations and thorough new material on: the fundamentals of wind turbine aerodynamics; wind turbine testing and modelling; wind turbine design standards; offshore wind energy; special purpose applications, such as energy storage and fuel production. Fifty additional homework problems and a new appendix on data processing make this comprehensive edition perfect for engineering students. This book offers a complete examination of one of the most promising sources of renewable energy and is a great introduction to this cross-disciplinary field for practising engineers. "provides a wealth of information and is an excellent reference book for people interested in the subject of wind energy." (IEEE Power & Energy Magazine, November/December 2003) "deserves a place in the library of every university and college where renewable energy is taught." (The International Journal of Electrical Engineering Education, Vol.41, No.2 April 2004) "a very comprehensive and well-organized treatment of the current status of wind power." (Choice, Vol. 40, No. 4, December 2002) **Advanced Engineering Mathematics, 22e** S. Chand Publishing "Advanced Engineering Mathematics" is written for the students of all engineering disciplines. Topics such as Partial Differentiation, Differential Equations, Complex Numbers, Statistics, Probability, Fuzzy Sets and Linear Programming which are an important part of all major universities have been well-explained. Filled with examples and in-text exercises, the book successfully helps the student to practice and retain the understanding of otherwise difficult concepts. **Field and Wave Electromagnetics** Pearson Education India **Flight Stability and Automatic Control** WCB/McGraw-Hill The second edition of Flight Stability and Automatic Control presents an organized introduction to the useful and relevant topics necessary for a flight stability and controls course. Not only is this text presented at the appropriate mathematical level, it also features standard terminology and nomenclature, along with expanded coverage of classical control theory, autopilot designs, and modern control theory. Through the use of extensive examples, problems, and historical notes, author Robert Nelson develops a concise and vital text for aircraft flight stability and control or flight dynamics courses. **Rocket Propulsion** Cambridge University Press A modern pedagogical treatment of the latest industry trends in rocket propulsion, developed from the authors' extensive experience in both industry and academia. Students are guided along a step-by-step journey through modern rocket propulsion, beginning with the historical context and an introduction to top-level performance measures, and progressing on to in-depth discussions of the chemical aspects of fluid flow combustion thermochemistry and chemical equilibrium, solid, liquid, and hybrid rocket propellants, mission requirements, and an overview of electric propulsion. With a wealth of homework problems (and a solutions manual for instructors online), real-life case studies and examples throughout, and an appendix detailing key numerical methods and links to additional online resources, this is a must-have guide for senior and first year graduate students looking to gain a thorough understanding of the topic along with practical tools that can be applied in industry. **Modern Flight Dynamics** McGraw-Hill This 64 page photo atlas is filled with large, full-color microbiology images. Photos will be linked to relevant animations. This atlas is new to Chess and is available in the new edition of the Chess Lab Manual or as a stand-alone for packaging. **Aircraft Structures for Engineering Students Thinking Like an Engineer An Active Learning Approach** Pearson College Division Thinking Like an Engineer: An Active Learning Approach, 2e, is specifically designed to utilize an active learning environment for first year engineering courses. In-class activities include collaborative problem-solving, computer-based activities, and hands-on experiments, encouraging guided inquiry. Homework assignments and review sections reinforce and expand on the activities. Content can be customized to match the topic organization in your course syllabi. Paired with Pearson's new MyEngineeringLab, Thinking Like an Engineer, 2e, is a complete digital solution for your first year engineering course. MyEngineeringLab offers students customized, self-paced learning with instant feedback. Students will be prepared ahead of class, allowing you to spend class time focusing on active learning. Subscriptions to MyEngineeringLab are available to purchase online or packaged with your textbook (unique ISBN). Use the following ISBNs to purchase MyEngineeringLab: Thinking Like an Engineer, 2e & MyEngineeringLab with Pearson eText Student Access Code Card for Thinking Like an Engineer, 2e ISBN: 0132981386 This package includes the Thinking Like an Engineer, 2e textbook, an access card for MyEngineeringLab, and a Pearson eText Student Access Code Card for Thinking Like an Engineer, 2e. MyEngineeringLab with Pearson eText -- Access Card -- for Thinking Like an Engineer, 2e ISBN: 0132766744 This stand-alone access card package contains an access code for MyEngineeringLab, and a Pearson eText student access code card for Thinking Like an Engineer, 2e eText. **Modern Compressible Flow With Historical Perspective** Anderson's book provides the most accessible approach to compressible flow for Mechanical and Aerospace Engineering students and professionals. In keeping with previous versions, the 3rd edition uses numerous historical vignettes that show the evolution of the field. New pedagogical features--"Roadmaps" showing the development of a given topic, and "Design Boxes" giving examples of design decisions--will make the 3rd edition even more practical and user-friendly than before. The 3rd edition strikes a careful balance between classical methods of determining compressible flow, and modern numerical and computer techniques (such as CFD) now used widely in industry & research. A new Book Website will contain all problem solutions for instructors. **Low-Speed Aerodynamics** Cambridge University Press A treatment of low-speed aerodynamics, covering both theory and computational techniques, first published in 2001. **Advanced Engineering Mathematics Fundamentals of Aircraft and Rocket Propulsion** Springer This book provides a comprehensive basics-to-advanced course in an aero-thermal science vital to the design of engines for either type of craft. The text classifies engines powering aircraft and single/multi-stage rockets, and derives performance parameters for both from basic aerodynamics and thermodynamics laws. Each type of engine is analyzed for optimum performance goals, and mission-appropriate engines selection is explained. Fundamentals of Aircraft and Rocket Propulsion provides information about and analyses of: thermodynamic cycles of shaft engines (piston, turboprop, turboshaft and propfan); jet engines (pulsejet, pulse detonation engine, ramjet, scramjet, turbojet and turbofan); chemical and non-chemical rocket engines; conceptual design of modular rocket engines (combustor, nozzle and turbopumps); and conceptual design of different modules of aero-engines in their design and off-design state. Aimed at graduate and final-year undergraduate students, this textbook provides a thorough grounding in the history and classification of both aircraft and rocket engines, important design features of all the engines detailed, and particular consideration of special aircraft such as unmanned aerial and short/vertical takeoff and landing aircraft. End-of-chapter exercises make this a valuable student resource, and the provision of a downloadable solutions manual will be of further benefit for course instructors. **Fox and McDonald's Introduction to Fluid Mechanics** John Wiley & Sons Through ten editions, Fox and McDonald's Introduction to Fluid Mechanics has helped students understand the physical concepts, basic principles, and analysis methods of fluid mechanics. This market-leading textbook provides a balanced, systematic approach to mastering critical concepts with the proven Fox-McDonald solution methodology. In-depth yet accessible chapters present governing equations, clearly state assumptions, and relate mathematical results to corresponding physical behavior. Emphasis is placed on the use of control volumes to support a practical, theoretically-inclusive problem-solving approach to the subject. Each comprehensive chapter includes numerous, easy-to-follow examples that illustrate good solution technique and explain challenging points. A broad range of carefully selected topics describe how to apply the governing equations to various problems, and explain physical concepts to enable students to model real-world fluid flow situations. Topics include flow measurement, dimensional analysis and similitude, flow in pipes, ducts, and open channels, fluid machinery, and more. To enhance student learning, the book incorporates numerous pedagogical features including chapter summaries and learning objectives, end-of-chapter problems, useful equations, and design and open-ended problems that encourage students to apply fluid mechanics principles to the design of devices and systems. **Introduction to Aircraft Aeroelasticity and Loads** John Wiley & Sons **Forthcoming Books**