

Engineering Fluid Mechanics 10th Tenth Edition By Elger Donald F Williams Barbara C Crowe Clayton T R Published By Wiley 2012

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Fluid Mechanics - Gregory Falkovich 2011-04-14

The multidisciplinary field of fluid mechanics is one of the most actively developing fields of physics, mathematics and engineering. In this book, the fundamental ideas of fluid mechanics are presented from a physics perspective. Using examples taken from everyday life, from hydraulic jumps in a kitchen sink to Kelvin-Helmholtz instabilities in clouds, the book provides readers with a better understanding of the world around them. It teaches the art of fluid-mechanical estimates and shows how the ideas and methods developed to study the mechanics of fluids are used to analyze other systems with many degrees of freedom in statistical physics and field theory. Aimed at undergraduate and graduate students, the book assumes no prior knowledge of the subject and only a basic understanding of vector calculus and analysis. It contains 32 exercises of varying difficulties, from simple estimates to elaborate calculations, with detailed solutions to help readers understand fluid mechanics.

Chemical Engineering Fluid Mechanics - Ron (Texas A&M University Darby, College Station TX) 2022-06

This book provides readers with the most current, accurate, and practical fluid mechanics related applications that the practicing BS level engineer needs today in the chemical and related industries, in addition to a fundamental understanding of these applications based upon sound fundamental basic scientific principles. The emphasis remains on problem solving, and the new edition includes many more examples.

Standard Handbook for Mechanical Engineers - 1923

Fluid Mechanics for Engineers - David A. Chin 2017

"This is a textbook for a first course in fluid mechanics taken by engineering students. The unique features of this textbook are that it: (1) focuses on the basic principles fluid mechanics that engineering students are likely to apply in their subsequent required undergraduate coursework, (2) presents the material in a rigorous fashion, and (3) provides many quantitative examples and illustrations of fluid mechanics applications. Students in all engineering disciplines where fluid mechanics is a core course should find this textbook stimulating and useful. In some chapters, the nature of the material necessitates a bias towards practical applications in certain engineering disciplines, and the disciplinary area of the author also contributes to the selection and presentation of practical examples throughout the text. In this latter respect, practical examples related to civil engineering applications are particularly prevalent"--

Engineering Fluid Mechanics - Donald F. Elger 2020-07-08

Engineering Fluid Mechanics guides students from theory to application, emphasizing critical thinking, problem solving, estimation, and other vital engineering skills. Clear, accessible writing puts the focus on essential concepts, while abundant illustrations, charts, diagrams, and examples illustrate complex topics and highlight the physical reality of fluid dynamics applications. Over 1,000 chapter problems provide the "deliberate practice"—with feedback—that leads to material mastery, and discussion of real-world applications provides a frame of reference that enhances student comprehension. The study of fluid mechanics pulls from chemistry, physics, statics, and calculus to describe the behavior of liquid matter; as a strong

foundation in these concepts is essential across a variety of engineering fields, this text likewise pulls from civil engineering, mechanical engineering, chemical engineering, and more to provide a broadly relevant, immediately practicable knowledge base. Written by a team of educators who are also practicing engineers, this book merges effective pedagogy with professional perspective to help today's students become tomorrow's skillful engineers.

Engineering Fluid Mechanics 10e Binder Ready Version + WileyPLUS Registration Card - Donald F. Elger 2012-10-08

This package includes a three-hole punched, loose-leaf edition of ISBN 9781118372203 and a registration code for the WileyPLUS course associated with the text. Before you purchase, check with your instructor or review your course syllabus to ensure that your instructor requires WileyPLUS. For customer technical support, please visit <http://www.wileyplus.com/support>. WileyPLUS registration cards are only included with new products. Used and rental products may not include WileyPLUS registration cards. Written by dedicated educators who are also real-life engineers with a passion for the discipline, Engineering Fluid Mechanics, 10th Edition, carefully guides students from fundamental fluid mechanics concepts to real-world engineering applications. The Tenth Edition and its accompanying resources deliver a powerful learning solution that helps students develop a strong conceptual understanding of fluid flow phenomena through clear physical descriptions, relevant and engaging photographs, illustrations, and a variety of fully worked example problems. Packed with more than 1,100 problems-- including open-ended design problems and computer-oriented problems--this text offers ample opportunities for students to apply fluid mechanics principles as they build knowledge in a logical way and enjoy the journey of discovery.

Modern Fluid Dynamics - Clement Kleinstreuer 2018-04-25

Modern Fluid Dynamics, Second Edition provides up-to-date coverage of intermediate and advanced fluids topics. The text emphasizes fundamentals and applications, supported by worked examples and case studies. Scale analysis, non-Newtonian fluid flow, surface coating, convection heat transfer, lubrication, fluid-particle dynamics, microfluidics, entropy generation, and fluid-structure interactions are among the topics covered. Part A presents fluids principles, and prepares readers for the applications of fluid dynamics covered in Part B, which includes computer simulations and project writing. A review of the engineering math needed for fluid dynamics is included in an appendix.

Engineering Fluid Mechanics - Donald F. Elger 2012-08-21

The 10th edition of Crowe's Engineering Fluid Mechanics will build upon the strengths and success of the 9th edition, including a focus on pedagogical support and deep integration with WileyPLUS, providing considering deeper support for development of conceptual understanding and problem solving. This new edition retains the hallmark features of Crowe's distinguished history: clarity of coverage, strong examples and practice problems, and comprehensiveness of material, but expands coverage to Computational Fluid Dynamics—a topic missed in earlier editions.

Fluid Mechanics With Engineering Applications - E. John

Finnemore 2001-10-25

This book is well known and well respected in the civil engineering market and has a following among civil engineers. This book is for civil engineers that teach fluid mechanics both within their discipline and as a service course to mechanical engineering students. As with all previous editions this 10th edition is extraordinarily accurate, and its coverage of open channel flow and transport is superior. There is a broader coverage of all topics in this edition of Fluid Mechanics with Engineering Applications. Furthermore, this edition has numerous computer-related problems that can be solved in Matlab and Mathcad.

Engineering Fluid Mechanics, 10th Edition - Donald F. Elger 2012

The Tenth Edition of Crowe's Engineering Fluid Mechanics builds upon the strengths and success of the previous edition, including a focus on pedagogical support and deep integration with WileyPLUS, providing deeper support for development of conceptual understanding and problem solving. This new edition retains the hallmark features of Crowe's distinguished history: clarity of coverage, strong examples and practice problems, and comprehensiveness of material, but expands coverage to include Computational Fluid Dynamics. *Engineering Fluid Mechanics* - John A. Roberson 1993-01-01 This comprehensive introduction to the field of fluid mechanics does not restrict its emphasis to a particular discipline. The first part of the book introduces basic principles such as pressure variation, the momentum principle, and energy equations. The second part uses these principles in general applications. This edition presents expanded coverage of civil engineering topics. It continues to follow the control-volume approach established in earlier editions. It also includes almost all steps in the derivations, along with complete word descriptions, and rigorous and clear derivation of equations.

Engineering Thermofluids - Mahmoud Massoud 2005-12-05 Thermofluids, while a relatively modern term, is applied to the well-established field of thermal sciences, which is comprised of various intertwined disciplines. Thus mass, momentum, and heat transfer constitute the fundamentals of thermofluids. This book discusses thermofluids in the context of thermodynamics, single- and two-phase flow, as well as heat transfer associated with single- and two-phase flows. Traditionally, the field of thermal sciences is taught in universities by requiring students to study engineering thermodynamics, fluid mechanics, and heat transfer, in that order. In graduate school, these topics are discussed at more advanced levels. In recent years, however, there have been attempts to integrate these topics through a unified approach. This approach makes sense as thermal design of widely varied systems ranging from hair dryers to semiconductor chips to jet engines to nuclear power plants is based on the conservation equations of mass, momentum, angular momentum, energy, and the second law of thermodynamics. While integrating these topics has recently gained popularity, it is hardly a new approach. For example, Bird, Stewart, and Lightfoot in Transport Phenomena, Rohsenow and Choi in Heat, Mass, and Momentum Transfer, El-Wakil, in Nuclear Heat Transport, and Todreas and Kazimi in Nuclear Systems have pursued a similar approach. These books, however, have been designed for advanced graduate level courses. More recently, undergraduate books using an integral approach are appearing.

Ten Chapters in Turbulence - Peter A. Davidson 2013

Leading experts summarize our current understanding of the fundamental nature of turbulence, covering a wide range of topics.

Fluid Mechanics for Civil and Environmental Engineers - Ahlam I. Shalaby 2018-02-21

An ideal textbook for civil and environmental, mechanical, and chemical engineers taking the required Introduction to Fluid Mechanics course, Fluid Mechanics for Civil and Environmental Engineers offers clear guidance and builds a firm real-world foundation using practical examples and problem sets. Each chapter begins with a statement of objectives, and includes practical examples to relate the theory to real-world engineering design challenges. The author places special emphasis on topics that are included in the Fundamentals of Engineering exam, and make the book more accessible by highlighting keywords and

important concepts, including Mathcad algorithms, and providing chapter summaries of important concepts and equations.

Materials Science and Engineering - William D. Callister, Jr.

2018-02-23

Materials Science and Engineering: An Introduction promotes student understanding of the three primary types of materials (metals, ceramics, and polymers) and composites, as well as the relationships that exist between the structural elements of materials and their properties.

Fluid Mechanics - Pijush K. Kundu 2013-04-09

Written in a clear and simple style, this textbook on fluid mechanics gives equal emphasis to both geophysical and engineering fluid mechanics. For physicists, it contains chapters on geophysical fluid mechanics and gravity waves; for engineers, it has chapters on aerodynamics and compressible flow. Of common interest are chapters on governing equations, laminar flows, boundary layers, instability, and turbulence. This book also presents topics of recent interest, such as deterministic chaos, and double-diffusive instability. Gives equal treatment to topics in both engineering and geophysical fluid dynamics Suitable as an intermediate or graduate course textbook for students in their senior year or above Treats topics of recent interest such as deterministic chaos, double diffusive instability and soliton Extensively illustrated Contains fully worked examples in each chapter as well as end-of-chapter problems An instructor's manual is available

Applied Fluid Mechanics Lab Manual - Habib Ahmari 2019

Basic knowledge about fluid mechanics is required in various areas of water resources engineering such as designing hydraulic structures and turbomachinery. The applied fluid mechanics laboratory course is designed to enhance civil engineering students' understanding and knowledge of experimental methods and the basic principle of fluid mechanics and apply those concepts in practice. The lab manual provides students with an overview of ten different fluid mechanics laboratory experiments and their practical applications. The objective, practical applications, methods, theory, and the equipment required to perform each experiment are presented. The experimental procedure, data collection, and presenting the results are explained in detail. LAB

A Physical Introduction to Fluid Mechanics - Alexander J. Smits 2000

Uncover Effective Engineering Solutions to Practical Problems With its clear explanation of fundamental principles and emphasis on real world applications, this practical text will motivate readers to learn. The author connects theory and analysis to practical examples drawn from engineering practice. Readers get a better understanding of how they can apply these concepts to develop engineering answers to various problems. By using simple examples that illustrate basic principles and more complex examples representative of engineering applications throughout the text, the author also shows readers how fluid mechanics is relevant to the engineering field. These examples will help them develop problem-solving skills, gain physical insight into the material, learn how and when to use approximations and make assumptions, and understand when these approximations might break down. Key Features of the Text * The underlying physical concepts are highlighted rather than focusing on the mathematical equations. * Dimensional reasoning is emphasized as well as the interpretation of the results. * An introduction to engineering in the environment is included to spark reader interest. * Historical references throughout the chapters provide readers with the rich history of fluid mechanics.

Munson, Young and Okiishi's Fundamentals of Fluid Mechanics - Andrew L. Gerhart 2020-12-03

Fundamentals of Fluid Mechanics, 9th Edition offers comprehensive topical coverage, with varied examples and problems, application of the visual component of fluid mechanics, and a strong focus on effective learning. The authors have designed their presentation to enable the gradual development of reader confidence in problem solving. Each important concept is introduced in easy-to-understand terms before more complicated examples are discussed. The 9th Edition includes new coverage of finite control volume analysis and compressible flow, as well as a selection of new problems. Continuing this important work's

tradition of extensive real-world applications, each chapter includes The Wide World of Fluids case study boxes in each chapter. In addition, there are a wide variety of videos designed to enhance comprehension, support visualization skill building and engage students more deeply with the material and concepts.

Laser Techniques for Fluid Mechanics - R.J. Adrian 2013-06-29
This volume includes revised and extended versions of selected papers presented at the Tenth International Symposium on Applications of Laser Techniques to Fluid Mechanics held at the Calouste Gulbenkian Foundation in Lisbon, during the period of July 10 to 13, 2000. The papers describe instrumentation developments for Velocity, Scalar and Multi-Phase Flows and results of measurements of Turbulent Flows, and Combustion and Engines. The papers demonstrate the continuing and healthy interest in the development of understanding of new methodologies and implementation in terms of new instrumentation. The prime objective of the Tenth Symposium was to provide a forum for the presentation of the most advanced research on laser techniques for flow measurements, and communicate significant results to fluid mechanics. The application of laser techniques to scientific and engineering fluid flow research was emphasized, but contributions to the theory and practice of laser methods were also considered where they facilitate new improved fluid mechanic research. Attention was placed on laser-Doppler anemometry, particle sizing and other methods for the measurement of velocity and scalars, such as particle image velocimetry and laser induced fluorescence.

Physics for Scientists and Engineers, Volume 2 - Raymond A. Serway 2013-01-01

Achieve success in your physics course by making the most of what PHYSICS FOR SCIENTISTS AND ENGINEERS has to offer. From a host of in-text features to a range of outstanding technology resources, you'll have everything you need to understand the natural forces and principles of physics. Throughout every chapter, the authors have built in a wide range of examples, exercises, and illustrations that will help you understand the laws of physics AND succeed in your course!
Important Notice: Media content referenced within the product description or the product text may not be available in the ebook version.

Fluid Mechanics - Victor Lyle Streeter 1983

Structural Analysis - R. C. Hibbeler 2002

The theory and application of structural analysis are presented as it applies to trusses, beams, and frames in this book/CD-ROM text. Emphasis is placed on developing the student's ability to both model and analyze a structure and on providing realistic applications encountered in professional practice. In each chapter, discussion of theory is followed by a summary of important concepts and a systematic approach for applying the theory. Example problems are solved using this method in order to clarify its numerical application. Chapter problems are given in sequential order of material covered, and arranged in order of difficulty. Classical methods of problem solving are emphasized over computerized matrix methods, but the CD-ROM supplies the STRAN computer program for checking answers to problems. Annotation copyrighted by Book News, Inc., Portland, OR.

Prandtl's Essentials of Fluid Mechanics - Herbert Oertel 2006-04-18

This book is an update and extension of the classic textbook by Ludwig Prandtl, Essentials of Fluid Mechanics. It is based on the 10th German edition with additional material included. Chapters on wing aerodynamics, heat transfer, and layered flows have been revised and extended, and there are new chapters on fluid mechanical instabilities and biomedical fluid mechanics. References to the literature have been kept to a minimum, and the extensive historical citations may be found by referring to previous editions. This book is aimed at science and engineering students who wish to attain an overview of the various branches of fluid mechanics. It will also be useful as a reference for researchers working in the field of fluid mechanics.

Engineering Fluid Mechanics 10e + WileyPLUS Registration Card - Donald F. Elger 2012-10-08

This package includes a copy of ISBN 9781118164297 and a registration code for the WileyPLUS course associated with the

text. Before you purchase, check with your instructor or review your course syllabus to ensure that your instructor requires WileyPLUS. For customer technical support, please visit <http://www.wileyplus.com/support>. WileyPLUS registration cards are only included with new products. Used and rental products may not include WileyPLUS registration cards. Written by dedicated educators who are also real-life engineers with a passion for the discipline, Engineering Fluid Mechanics, 10th Edition, carefully guides students from fundamental fluid mechanics concepts to real-world engineering applications. The Tenth Edition and its accompanying resources deliver a powerful learning solution that helps students develop a strong conceptual understanding of fluid flow phenomena through clear physical descriptions, relevant and engaging photographs, illustrations, and a variety of fully worked example problems. Packed with more than 1,100 problems-- including open-ended design problems and computer-oriented problems--this text offers ample opportunities for students to apply fluid mechanics principles as they build knowledge in a logical way and enjoy the journey of discovery.

Engineering Fluid Mechanics 10E Binder Ready Version with WileyPLUS Blackboard Card Set - Donald F. Elger 2013-06-12

This package includes a three-hole punched, loose-leaf edition of ISBN 9781118372203 and a registration code for the WileyPLUS course associated with the text. Before you purchase, check with your instructor or review your course syllabus to ensure that your instructor requires WileyPLUS. For customer technical support, please visit <http://www.wileyplus.com/support>. WileyPLUS registration cards are only included with new products. Used and rental products may not include WileyPLUS registration cards. Written by dedicated educators who are also real-life engineers with a passion for the discipline, Engineering Fluid Mechanics, 10th Edition, carefully guides students from fundamental fluid mechanics concepts to real-world engineering applications. The Tenth Edition and its accompanying resources deliver a powerful learning solution that helps students develop a strong conceptual understanding of fluid flow phenomena through clear physical descriptions, relevant and engaging photographs, illustrations, and a variety of fully worked example problems. Packed with more than 1,100 problems-- including open-ended design problems and computer-oriented problems--this text offers ample opportunities for students to apply fluid mechanics principles as they build knowledge in a logical way and enjoy the journey of discovery.

Engineering Fluid Mechanics - John A. Roberson 1980

Engineering Fluid Mechanics - K L Kumar 2008

It is a long way from the first edition in 1976 to the present sixth edition in 1995. This edition is dedicated to the memory of Prof. S.P. Luthra (Once Head, Applied Mechanics Director, IIT Delhi) who wrote the foreword to its first edition. So many faculty members and students from different parts of the country and from abroad have accepted the text and contributed to its development. The book has been improved and updated with every edition.

Advanced Engineering Mathematics - Michael Greenberg 2013-09-20

Appropriate for one- or two-semester Advanced Engineering Mathematics courses in departments of Mathematics and Engineering. This clear, pedagogically rich book develops a strong understanding of the mathematical principles and practices that today's engineers and scientists need to know. Equally effective as either a textbook or reference manual, it approaches mathematical concepts from a practical-use perspective making physical applications more vivid and substantial. Its comprehensive instructional framework supports a conversational, down-to-earth narrative style offering easy accessibility and frequent opportunities for application and reinforcement.

Engineering Fluid Mechanics -

Introduction to Engineering Fluid Mechanics - Marcel Escudier 2017

We inhabit a world of fluids, including air (a gas), water (a liquid),

steam (vapour) and the numerous natural and synthetic fluids which are essential to modern-day life. Fluid mechanics concerns the way fluids flow in response to imposed stresses. The subject plays a central role in the education of students of mechanical engineering, as well as chemical engineers, aeronautical and aerospace engineers, and civil engineers. This textbook includes numerous examples of practical applications of the theoretical ideas presented, such as calculating the thrust of a jet engine, the shock- and expansion-wave patterns for supersonic flow over a diamond-shaped aerofoil, the forces created by liquid flow through a pipe bend and/or junction, and the power output of a gas turbine. The first ten chapters of the book are suitable for first-year undergraduates. The latter half covers material suitable for fluid-mechanics courses for upper-level students. Although knowledge of calculus is essential, this text focuses on the underlying physics. The book emphasizes the role of dimensions and dimensional analysis, and includes more material on the flow of non-Newtonian liquids than is usual in a general book on fluid mechanics -- a reminder that the majority of synthetic liquids are non-Newtonian in character.

An Album of Fluid Motion - Milton Van Dyke 1982

[A History and Philosophy of Fluid Mechanics](#) - G. A. Tokaty
2013-02-20

Summary and general methods of constructing static and dynamic equations, dealing with the laws of mechanics for heated elastic solids, forms of aerodynamic operators, structural operators, much more. 1962 edition.

[Similarity and Dimensional Methods in Mechanics](#) - L. I. Sedov
2014-05-12

Similarity and Dimensional Methods in Mechanics provides a complete development of the basic concepts of dimensional analysis and similarity methods, illustrated by applications to a wide variety of problems in mechanics. This book shows the power of dimensional and similarity methods in solving problems in the theory of explosions and astrophysics. Organized into five chapters, this book begins with an overview of the fundamental ideas behind similarity and dimensional methods. This text then provides a series of examples of application of the methods. Other chapters consider the use of similarity and dimensional analysis in developing fundamental contributions to viscous fluid theory. This book discusses as well the various theories of isotropic turbulence. The final chapter deals with the applications to the theory of the luminosity and internal structure of stars. This book is a valuable resource for students who wish to learn dimensional analysis and similarity methods for the first time. Readers who are connected with the many aspects of gas dynamics, including space technology, astrophysics, and atomic energy will also find this book useful.

Fluid Mechanics - L D Landau 2013-09-03

Fluid Mechanics, Second Edition deals with fluid mechanics, that is, the theory of the motion of liquids and gases. Topics covered range from ideal fluids and viscous fluids to turbulence, boundary layers, thermal conduction, and diffusion. Surface phenomena, sound, and shock waves are also discussed, along with gas flow, combustion, superfluids, and relativistic fluid dynamics. This book is comprised of 16 chapters and begins with an overview of the fundamental equations of fluid dynamics, including Euler's equation and Bernoulli's equation. The reader is then introduced to the equations of motion of a viscous fluid; energy dissipation in an incompressible fluid; damping of gravity waves; and the mechanism whereby turbulence occurs. The following chapters explore the laminar boundary layer; thermal conduction in fluids; dynamics of diffusion of a mixture of fluids; and the phenomena that occur near the surface separating two continuous media. The energy and momentum of sound waves; the direction of variation of quantities in a shock wave; one- and two-dimensional gas flow; and the intersection of surfaces of discontinuity are also also considered. This monograph will be of interest to theoretical physicists.

An Introduction to Fluid Mechanics - Faith A. Morrison
2013-04-15

"Why Study Fluid Mechanics? 1.1 Getting Motivated Flows are beautiful and complex. A swollen creek tumbles over rocks and through crevasses, swirling and foaming. A child plays with sticky

taffy, stretching and reshaping the candy as she pulls it and twist it in various ways. Both the water and the taffy are fluids, and their motions are governed by the laws of nature. Our goal is to introduce the reader to the analysis of flows using the laws of physics and the language of mathematics. On mastering this material, the reader becomes able to harness flow to practical ends or to create beauty through fluid design. In this text we delve deeply into the mathematical analysis of flows, but before beginning, it is reasonable to ask if it is necessary to make this significant mathematical effort. After all, we can appreciate a flowing stream without understanding why it behaves as it does. We can also operate machines that rely on fluid behavior - drive a car for exam- 15 behavior? mathematical analysis. ple - without understanding the fluid dynamics of the engine, and we can even repair and maintain engines, piping networks, and other complex systems without having studied the mathematics of flow. What is the purpose, then, of learning to mathematically describe fluid? The answer to this question is quite practical: knowing the patterns fluids form and why they are formed, and knowing the stresses fluids generate and why they are generated is essential to designing and optimizing modern systems and devices. While the ancients designed wells and irrigation systems without calculations, we can avoid the wastefulness and tediousness of the trial-and-error process by using mathematical models"--

Fox and McDonald's Introduction to Fluid Mechanics - Robert W. Fox 2020-06-30

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.

Engineering Fluid Mechanics Solution Manual -

[Prandtl's Essentials of Fluid Mechanics](#) - Herbert Oertel jr.
2004-03-22

This book is an update and extension of the classic textbook by Ludwig Prandtl, Essentials of Fluid Mechanics. It is based on the 10th German edition with additional material included. Chapters on wing aerodynamics, heat transfer, and layered flows have been revised and extended, and there are new chapters on fluid mechanical instabilities and biomedical fluid mechanics. References to the literature have been kept to a minimum, and the extensive historical citations may be found by referring to previous editions. This book is aimed at science and engineering students who wish to attain an overview of the various branches of fluid mechanics. It will also be useful as a reference for researchers working in the field of fluid mechanics.

Fluid Mechanics for Chemical Engineers with Microfluidics and CFD. - James O. Wilkes 2006

Fluid Mechanics for Chemical Engineers, Second Edition, with Microfluidics and CFD, systematically introduces fluid mechanics from the perspective of the chemical engineer who must understand actual physical behavior and solve real-world problems. Building on a first edition that earned Choice Magazine's Outstanding Academic Title award, this edition has been thoroughly updated to reflect the field's latest advances. This second edition contains extensive new coverage of both

microfluidics and computational fluid dynamics, systematically demonstrating CFD through detailed examples using FlowLab

and COMSOL Multiphysics. The chapter on turbulence has been extensively revised to address more complex and realistic challenges, including turbulent mixing and recirculating flows.