

Hydraulic Engineering Books Free

Civil Engineering Hydraulics John Wiley & Sons

Earthen levees are extensively used to protect the population and infrastructure from periodic floods and high water due to storm surges. The causes of failure of levees include overtopping, surface erosion, internal erosion, and slope instability. Overtopping may occur during periods of flooding due to insufficient freeboard. The most problematic situation involves the levee being overtopped by both surge and waves when the surge level exceeds the levee crest elevation with accompanying wave overtopping. Overtopping of levees produces fast-flowing, turbulent water velocities on the landward-side slope that can potentially damage the protective grass covering and expose the underlying soil to erosion. If overtopping continues long enough, the erosion may eventually result in loss of levee crest elevation and possibly breaching of the protective structure. Hence, protecting levees from erosion by surge overflow and wave overtopping is necessary to assure a viable and safe levee system. This book presents a cutting-edge approach to understanding overtopping hydraulics under negative free board of earthen levees, and to the study of levee reinforcing methods. Combining soil erosion test, full-scale laboratory overtopping hydraulics test, and numerical modeling for the turbulent overtopping hydraulics. It provides an analysis that integrates the mechanical and hydraulic processes governing levee overtopping occurrences and engineering approaches to reinforce overtopped levees. Topics covered: surge overflow, wave overtopping and their combination, full-scale hydraulic tests, erosion tests, overtopping hydraulics, overtopping discharge, and turbulent analysis. This is an invaluable resource for graduate students and researchers working on levee design, water resource engineering, hydraulic engineering, and coastal engineering, and for professionals in the field of civil and environmental engineering, and natural hazard analysis.

Rockfill in Hydraulic Engineering

This book deals with hydraulic cylinders of varying designs. The principles of operation, constructional details, and classification of the hydraulic cylinders are explained in detail. This chapter also covers the topics of position transducers and swing clamp cylinders. Further, the details of cylinder applications, the design aspects of hydraulic cylinders, and the safety requirements of the cylinders are explained in this book. The book uses the SI system of units. The language of the book is simple, the topics are logically arranged, information is most up-to-date, and the cost of the book is kept reasonable. A fluid power professional should possess exceptional knowledge about hydraulic cylinders for his/her continuing professional development and career advancement. A faculty or a student in an engineering institution must acquire the knowledge of hydraulic cylinders to upgrade his/her knowledge. As the knowledge and skill of the reader improve, professional life becomes more outstanding and comfortable. The book has been written by a professional trainer who has trained thousands of professionals and students, over 25 years. If you are looking for a more in-depth knowledge into fluid power, then this book is a valuable resource that will assist you in your quest for professional development.

Hydraulic Engineering II

A Textbook of Fluid Mechanics and Hydraulic Machines

A technician's and engineer's guide

Hydraulic Gates and Valves

An Introduction

Draws the Link Between Service Knowledge and the Advanced Theory of Fluid Power Providing the fundamental knowledge on how a typical hydraulic system generates, delivers, and deploys fluid power, Basics of Hydraulic Systems highlights the key configuration features of the components that are needed to support their functiona

Combines More Than 40 Years of Expert Experience Computational modelling and simulation methods have a wide range of applications in hydraulic and coastal engineering. Computational Modelling in Hydraulic and Coastal Engineering provides an introductory but comprehensive coverage of these methods. It emphasizes the use of the finite differences method with applications in reservoir management, closed-conduit hydraulics, free-surface channel and coastal domain flows, surface gravity waves, groundwater movement, and pollutant and sediment transport processes. It focuses on applications rather than lengthy theories or derivations of complex formulas and is supported by a wealth of hands-on numerical examples and computer codes written in MATLAB but available also in BASIC. PowerPoint presentations and learning assignment projects/quizzes, along with learning assessment rubrics, are included. A comprehensive study highlighting the infinite differences method, this book: Covers the fundamentals of flow in pressurized conduits Contains solutions for the classical Hardy Cross pipe network problem Designates the mathematical description of groundwater flow in confined and unconfined aquifers Provides numerical examples for one- and two-dimensional applications including saltwater intrusion Presents examples of transport of pollutants, sediment and air bubbles using Eulerian and Lagrangian solution methodologies Includes information on weighted residuals, the finite elements method, and the boundary integral method Computational Modelling in Hydraulic and Coastal Engineering suits senior-level undergraduates and graduate students as well as

practitioners such as coastal and maritime engineers, environmental engineers, civil engineers, computer modellers, and hydro-geologists. Hydraulic engineering of dams and their appurtenant structures counts among the essential tasks to successfully design safe water-retaining reservoirs for hydroelectric power generation, flood retention, and irrigation and water supply demands. In view of climate change, especially dams and reservoirs, among other water infrastructure, will and have to play an even more important role than in the past as part of necessary mitigation and adaptation measures to satisfy vital needs in water supply, renewable energy and food worldwide as expressed in the Sustainable Development Goals of the United Nations. This book deals with the major hydraulic aspects of dam engineering considering recent developments in research and construction, namely overflow, conveyance and dissipations structures of spillways, river diversion facilities during construction, bottom and low-level outlets as well as intake structures. Furthermore, the book covers reservoir sedimentation, impulse waves and dambreak waves, which are relevant topics in view of sustainable and safe operation of reservoirs. The book is richly illustrated with photographs, highlighting the various appurtenant structures of dams addressed in the book chapters, as well as figures and diagrams showing important relations among the governing parameters of a certain phenomenon. An extensive literature review along with an updated bibliography complete this book.

Intended as a textbook for the undergraduate students of civil and mechanical engineering, this book is the outcome of authors' vast experience in this subject area. It presents the basic theories of hydraulics and all types of hydraulic machines that are used in these days in our day-to-day life. Organized in two parts—Hydraulics (Part I) and Hydraulic Machines (Part II), the book is written in an easy-to-follow method in conformity to the syllabi followed in universities. The chapter end exercises of all the chapters are carefully prepared for the students, which enhance their problem-solving skills. This book is also useful for the students of chemical, electrical and aeronautical engineering. Key Features Copious well-illustrated figures Detailed description of various types of pumps and miscellaneous hydraulic machines Numerous solved problems and unsolved problems with answers Deductions and numerical examples in S.I. Units

In the SI Units

Hydraulic Rig Technology and Operations

Hydraulics, Fluid Mechanics and Hydraulic Machines

Fundamentals of Hydraulic Engineering Systems

Practical Hydraulics and Water Resources Engineering

Hydraulics and Pneumatics: A Technician's and Engineer's Guide provides an introduction to the components and operation of a hydraulic or pneumatic system. This book discusses the main advantages and disadvantages of pneumatic or hydraulic systems. Organized into eight chapters, this book begins with an overview of industrial prime movers. This text then examines the three different types of positive displacement pump used in hydraulic systems, namely, gear pumps, vane pumps, and piston pumps. Other chapters consider the pressure in a hydraulic system, which can be quickly and easily controlled by devices such as unloading and pressure regulating valves. This book discusses as well the importance of control valves in pneumatic and hydraulic systems to regulate and direct the flow of fluid from compressor or pump to the various load devices. The final chapter deals with the safe-working practices of the systems. This book is a valuable resource for process control engineers.

Now includes Worked Examples for lecturers in a companion pdf! The fourth edition of this volume presents design principles and practical guidance for key hydraulic structures. Fully revised and updated, this new edition contains enhanced texts and sections on: environmental issues and the World Commission on Dams partially saturated soils, small amenity dams, tailing dams, upstream dam face protection and the rehabilitation of embankment dams RCC dams and the upgrading of masonry and concrete dams flow over stepped spillways and scour in plunge pools cavitation, aeration and vibration of gates risk analysis and contingency planning in dam safety small hydroelectric power development and tidal and wave power wave statistics, pipeline stability, wave–structure interaction and coastal modelling computational models in hydraulic engineering. The book's key topics are explored in two parts - dam engineering and other hydraulic structures – and the text concludes with a chapter on models in hydraulic engineering. Worked numerical examples supplement the main text and extensive lists of references conclude each chapter. Hydraulic Structures provides advanced students with a solid foundation in the subject and is a useful reference source for researchers, designers and other professionals.

Based on the author's extensive practical experience, this new edition will act as a definitive reference work on gates and valves. Hydraulic gates and valves in free surface flow and submerged outlets: 2nd edition will provide you with a comprehensive overview of the subject and clearly describes the principle options available to engineers and designers and outlines the main advantages and disadvantages of all hydraulic gates and valves, highlighting potential problems in their use. This fully revised edition includes: Information about new types of water-operated automatic gates, rolling weir gates, fuse gates and an extended part on barrier gates and their details The sections on seals, the trunnions of radial gates, ice formation, gate operation and structural design have all been expanded New sections on hazard and reliability of gates, earthquake effects on gates and operating machinery, environmental impact and aesthetics, as well as maintenance An appendix on the calculation of hydrostatic loads on radial gates has been set out Hydraulic gates and valves in free surface flow and submerged outlets: 2nd edition will be of great benefit to engineers who work or design project

Develop high-performance hydraulic and pneumatic power systems Design, operate, and maintain fluid and pneumatic power equipment using the expert information contained in this

authoritative volume. Fluid Power Engineering presents a comprehensive approach to hydraulic systems engineering with a solid grounding in hydrodynamic theory. The book explains how to create accurate mathematical models, select and assemble components, and integrate powerful servo valves and actuators. You will also learn how to build low-loss transmission lines, analyze system performance, and optimize efficiency. Work with hydraulic fluids, pumps, gauges, and cylinders Design transmission lines using the lumped parameter model Minimize power losses due to friction, leakage, and line resistance Construct and operate accumulators, pressure switches, and filters Develop mathematical models of electrohydraulic servosystems Convert hydraulic power into mechanical energy using actuators Precisely control load displacement using HSAs and control valves Apply fluid systems techniques to pneumatic power systems Shallow Water Dynamics

Hydraulics in Civil and Environmental Engineering

Basic Fluid Mechanics and Hydraulic Machines

Hydraulics for Civil Engineers

Hydraulic Cylinders

The text on tidal hydraulic engineering includes discussion of: basic characteristics of tides and tidal propagation; hydrographic surveys in tidal rivers; and design considerations for tidal sluice gates for drainage and fish farms in aquaculture.

Hydraulic Rig Technology and Operations delivers the full spectrum of topics critical to running a hydraulic rig. Also referred to as a snubbing unit, this single product covers all the specific specialties and knowledge needed to keep production going, from their history, to components and equipment. Also included are the practical calculations, uses, drilling examples, and technology used today. Supported by definitions, seal materials and shapes, and Q&A sections within chapters, this book gives drilling engineers the answers they need to effectively run and manage hydraulic rigs from anywhere in the world. Presents the full range of hydraulic machinery in drilling engineering, including basic theory, calculations, definitions and name conventions Helps readers gain practical knowledge on day-to-day operations, troubleshooting, and decision-making through real-life examples Includes Q&A quizzes that help users test their knowledge

Whatever your hydraulic applications, Practical Hydraulic Systems: Operation & Troubleshooting For Engineers & Technicians will help you to increase your knowledge of the fundamentals, improve your maintenance programs and become an excellent troubleshooter of problems in this area. Cutaways of all major components are included in the book to visually demonstrate the components' construction and operation.

*Developing an understanding of how it works leads to an understanding of how and why it fails. Multimedia views of the equipment are shown, to give as realistic a view of hydraulic systems as possible. The book is highly practical, comprehensive and interactive. It discusses Hydraulic Systems construction, design applications, operations, maintenance, and management issues and provides you with the most up-to-date information and Best Practice in dealing with the subject. * A focus on maintenance and troubleshooting makes this book essential reading for practising engineers. * Written to cover the requirements of mechanical / industrial and civil engineering. * Cutaway diagrams demonstrate the construction and operation of key equipment.*

Hydraulic Engineering: Fundamental Concepts includes hydraulic processes with corresponding systems and devices. The hydraulic processes includes the fundamentals of fluid mechanics and pressurized pipe flow systems. This book illustrates the use of appropriate pipeline networks along with various devices like pumps, valves and turbines. The knowledge of these processes and devices is extended to design, analysis and implementation.

Hydraulics of Levee Overtopping

Free-Surface Flow:

Water Engineering Modeling and Mathematic Tools

Tidal Hydraulic Engineering

Hydraulics and Hydraulic Machines

This thorough update of a well-established textbook covers a core subject taught on every civil engineering course. Now expanded to cover environmental hydraulics and engineering hydrology, it has been revised to reflect current practice and course requirements. As previous editions, it includes substantial worked example sections with an on-line solution manual. A strength of the book has always been in its presentation these exercises which has distinguished it from other books on hydraulics, by enabling students to test their understanding of the theory and of the methods of analysis and design. Civil Engineering Hydraulics provides a succinct introduction to the theory of civil engineering hydraulics, together with a large number of worked examples and exercise problems with answers. Each chapter includes a worked example section with solutions; a list of recommended reading; and exercise problems with answers to enable students to assess their understanding. The book will be invaluable throughout a student's entire course – but particularly for first and second year study, and will also be welcomed by practising engineers as a concise reference.

Applied Mathematics in Hydraulic Engineering is an excellent teaching guide and reference to treating nonlinear mathematical problems in hydraulic, hydrologic and coastal engineering. Undergraduates studying civil and coastal engineering, as well as analysis and differential equations, are started off applying calculus to the treatment of nonlinear partial differential equations, before given the chance to practice real-life problems related to the fields. This textbook is not only a good source of teaching materials for teachers or instructors, but is also useful as a comprehensive resource of mathematical tools to researchers.

Vijay Singh explains the basic concepts of entropy theory from a hydraulic perspective and demonstrates the theory's application in solving practical engineering problems.

Mechanistic models are often employed to simulate processes in coastal environments. However, these predictive tools are highly specialized, involve certain assumptions and limitations, and can be manipulated only by experienced engineers who have a thorough understanding of the underlying principles. This results in significant constraints on their manipulation as well as large gaps in understanding and expectations between the developers and users of a model. Recent advancements in soft computing technologies make it possible to integrate machine learning capabilities into numerical modelling systems in order to bridge the gaps and lessen the demands on human experts. This book reviews the state-of-the-art in conventional coastal modelling as well as in the increasingly popular integration of various artificial intelligence technologies into coastal modelling. Conventional hydrodynamic and water quality modelling techniques comprise finite difference and finite element methods. The novel algorithms and methods include knowledge-based systems, genetic algorithms, artificial neural networks, and fuzzy inference systems. Different soft computing methods contribute towards accurate and reliable prediction of coastal processes. Combining these techniques and harnessing their benefits has the potential to make extremely powerful modelling tools.

*Hydraulics and Pneumatics
Fundamental Concepts*

Hydraulics of Groundwater

An Introduction to Nonlinear Differential Equations

This text provides comprehensive treatment of hydraulic engineering in both closed conduit and open channel flow and a clear presentation, with more examples and problems than most competitors. The carefully organized coverage, beginning with basics of hydrology, pipelines, and open channels. Also includes both hydrologic background and traditional hydraulics. A good balance of theory and applications and extensive appendices, including selected computer programs, round out the text.

This book comprises the papers of the International Conference on Hydraulics of Dams and Rivers Structures, held in Tehran, 26-28 April 2004. The topics covered include air-water flows, intakes and outlets, hydrodynamic forces, energy dissipators, stepped spillways, scouring and sedimentation around structures, numerical approaches in river hydrodynamics, river response to hydraulic structures and hydroinformatic applications. This proceedings provides professionals and researchers with news of interdisciplinary research findings, considering future development of the sector in its many and various applications.

The Hydraulics of Open Channel Flow is a major new textbook for senior undergraduates and postgraduate students. Dr Chanson first introduces the basic principles of open channel flow hydraulics, namely the continuity, Bernoulli and momentum principles. Applications include short transitions (e.g. intake), hydraulic jumps and flow resistance. The key topics of sediment transport, hydraulic modelling and the design of hydraulic structures are then developed in turn. This innovative textbook contains numerous examples, including practical applications, and is fully illustrated with line drawings and photographs in colour and black and white. Exercises - located at the end of each chapter and as revision sections at the end of each part - form an integral part of the text. The book concludes with major assignments, which assimilate all the knowledge into a fully coherent whole. Solutions to exercises, together with the shareware software Hydroculv, are available from the Web at: Key Features: Ideal for Use by Students and Lecturers in Civil and Environmental Engineering Numerous Exercises and Examples, Including a Supporting Website, to Aid the Reader's Understanding Comprehensive Coverage of the Basic Principles and the Key Application Areas of the Hydraulics of Open Channel Flow the Reader is Taken Step by Step from the Basic Principles to the More Advanced Design Calculations

Free-Surface Flow: Shallow-Water Dynamics presents a novel approach to this phenomenon. It bridges the gap between traditional books on open-channel flow and analytical fluid mechanics. Shallow-water theory is established by formal integration of the Navier-Stokes equations, and boundary resistance is developed by a rigorous construction of turbulent flow models for channel flow. In addition, the book presents a comprehensive description of shallow-water waves by mathematical analysis. These methods form the foundation for understanding flood routing, sudden water releases, dam and levee break, sluice gate dynamics and wave-current interaction. Bridges the gap between traditional books on open-channel flow and wave mechanics. Presents a comprehensive description of shallow-water waves by characteristic and bicharacteristic analysis. Presents techniques for wave control and active flood mitigation.

*Applied Mathematics in Hydraulic Engineering
Civil Engineering Hydraulics*

Proceedings of the 1st international conference 'Geo-filter', Karlsruhe, Germany, 20-22 October 1992

Practical Hydraulic Systems: Operation and Troubleshooting for Engineers and Technicians

In Free Surface Flow and Submerged Outlets

The favourable and warm reception, which the previous editions and reprints of this popular book has enjoyed all over India and abroad has been a matter of great satisfaction for me.

Irrigation Engineering and Hydraulic Structures comprehensively deals with all aspects of Irrigation in India, soil moisture and different types of irrigation systems including but not limited to Sprinkler and Micro-Irrigation. The book also focuses on Engineering Hydrology, Dams, Water Power Engineering as well as Irrigation Water Management. Special care has been taken to highlight the principal design procedures that have been widely recommended as well as suggest improvements in the application of existing methods and adoption of latest techniques used in other parts of the world. 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 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 "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—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, 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 is written with professional perspective to help today's students become tomorrow's skillful engineers.

This text explores the laws governing the flow and storage of groundwater in aquifers and provides all the necessary tools to forecast the behavior of a regional aquifer system. 1979 edition.

Computational Modelling in Hydraulic and Coastal Engineering

Irrigation Engineering And Hydraulic Structures

Basics of Hydraulic Systems

Hydraulic Engineering

Geosynthetics and Geosystems in Hydraulic and Coastal Engineering

Hydraulic research is developing beyond traditional civil engineering, since the number of natural hazards increased in recent years, and so did the extent and scope of structural safety assessment and environmental research. Hydraulic Engineering II contains 44 technical papers from the 2nd SREE Conference on Hydraulic Engineering (CHE 2013, Hong Kong, 2-3 November 2013, including the Third SREE Workshop on Environment and Safety Engineering, WESE 2013), discusses recent advances and issues, and identifies challenges associated with engineering applications in hydraulic engineering. The contributions showcase recent developments in the areas of hydraulic engineering and environmental engineering, and other related fields. The sections on hydraulic engineering mainly focus on river engineering and sediment transport, flood hazards and innovative control measures, rainfall modelling, dam safety, slope stability, environmental hydraulics and hydrology, while the contributions related to environmental issues focus on environmental prediction and control techniques in environmental geoscience, environmental ecology, water pollution and ecosystem degradation, applied meteorology, coastal engineering, safety engineering and environmental pollution control. Hydraulic Engineering II will be invaluable to academics and professionals in both hydraulic and environmental engineering.

A review of the existing applications of geosynthetics and geosystems in hydraulic and coastal engineering, with an overview on material specifications, structural components, relevant tools during conceptual and detail design, possible applications, and execution aspects. A more detailed description is given of new or lesser-known systems and applications. Additional basic information on design methodology and geosynthetics is included to provide a basic framework of information for design purposes.

Free-Surface Hydraulics is a unified, pragmatic account of the water surface and its underlying mechanics. Based on the author's 30 years experience of research and teaching in civil engineering hydraulics, this text is designed to help students achieve a coherent understanding More...of a subject often obscured by empirical detail and unstructured approaches. The text leads progressively from hydrostatics, through steady and unsteady flows, to waves and tides. The author draws a careful distinction between kinematic and dynamic motions - the latter he treats at some length by the method of characteristics, regarded as one of the more rigorous approaches to unsteady flow. A special feature is the final chapter, devoted to the disruption of free surfaces by air and bubble motion, especially in pipes. Water is now at the centre of world attention as never before and more professionals from all walks of life are engaging in careers linked to water - in public water supply and waste treatment, agriculture, irrigation, energy, environment, amenity management, and sustainable development. This book offers an appropriate depth of understanding of basic hydraulics and water resources engineering for those who work with civil engineers and others in the complex world of water resources development, management, and water security. It is simple, practical, and avoids (most of) the maths in traditional textbooks. Lots of excellent 'stories' help readers to quickly grasp important water principles and practices. This third edition is broader in scope and includes new chapters on water resources engineering and water security. Civil engineers may also find it a useful introduction to complement the more rigorous hydraulics textbooks.

Engineering Fluid Mechanics

Elements of Hydraulic Engineering

Fundamentals of Hydraulic Engineering

Filters in Geotechnical and Hydraulic Engineering

Modelling for Coastal Hydraulics and Engineering

The conference "Geo-filters 92" was arranged to provide an opportunity for exchanging knowledge on filtering. Research results and practical experience from many countries in both the fields of granular and geotextile filters have been compiled in this volume. Design engineers can find new & additional information for daily practice & future research & take advantage of this compilation. Contains guidelines & proposal & numerous references.

Water Engineering Modeling and Mathematic Tools provides an informative resource for practitioners who want to learn more about different techniques and models in water engineering and their practical applications and case studies. The book provides modelling theories in an easy-to-read format verified with on-site models for specific regions and scenarios. Users will find this to be a significant contribution to the development of mathematical tools, experimental techniques, and data-driven models that support modern-day water engineering applications. Civil engineers, industrialists, and water management experts should be familiar with advanced techniques that can be used to improve existing systems in water engineering. This book provides key ideas on recently developed machine learning methods and AI modelling. It will serve as a common platform for practitioners who need to become familiar with the latest developments of computational techniques in water

engineering. Includes firsthand experience about artificial intelligence models, utilizing case studies Describes biological, physical and chemical techniques for the treatment of surface water, groundwater, sea water and rain/snow Presents the application of new instruments in water engineering
Hydraulics for Civil Engineers provides a thorough introduction to the principles of hydraulics and fluid mechanics Combining core theories with the need for sustainable solutions, The book covers all the fundamental areas m hydraulics, inducting pressure in liquids, real flow in pipes, turbines and pumps, hydrology of surface water drainage, coastal hydraulics and hydrology of river flow Key concepts and designs ate explored using real-life scenarios with easily digestible topic summaries offered throughout each chapter. Produced by the Institution of Civil Engineers. ICE Textbooks offer clear, concise and practical information on the major principles of civil and structural engineering. They are an indispensable companion to undergraduate audiences, providing students with: A comprehensive introduction to core engineering subjects, Real-life case studies and worked examples, Practice questions, exercise and supplementary online solutions available at: www.incetextbooks.com, Key learning aims and chapter summaries, Further reading suggestions Book jacket.

This classic text, now in its sixth edition, combines a thorough coverage of the basic principles of civil engineering hydraulics with a wide-ranging treatment of practical, real-world applications. It now includes a powerful online resource with worked solutions for chapter problems and solution spreadsheets for more complex problems that may be used as templates for similar issues. *Hydraulics in Civil and Environmental Engineering* is structured into two parts to deal with principles and more advanced topics. The first part focuses on fundamentals, such as hydrostatics, hydrodynamics, pipe and open channel flow, wave theory, physical modelling, hydrology and sediment transport. The second part illustrates engineering applications of these principles to pipeline system design, hydraulic structures, river and coastal engineering, including up-to-date environmental implications, as well as a chapter on computational modelling, illustrating the application of computational simulation techniques to modern design, in a variety of contexts. New material and additional problems for solution have been added to the chapters on hydrostatics, pipe flow and dimensional analysis. The hydrology chapter has been revised to reflect updated UK flood estimation methods, data and software. The recommendations regarding the assessment of uncertainty, climate change predictions, impacts and adaptation measures have been updated, as has the guidance on the application of computational simulation techniques to river flood modelling. Andrew Chadwick is an honorary professor of coastal engineering and the former associate director of the Marine Institute at the University of Plymouth, UK. John Morfett was the head of hydraulics research and taught at the University of Brighton, UK. Martin Borthwick is a consultant hydrologist, formerly a flood hydrology advisor at the UK's Environment Agency, and previously an associate professor at the University of Plymouth, UK.

Irrigation Engineering and Hydraulic Structures

Fluid Power Engineering

The Hydraulics of Open Channel Flow

Free-Surface Hydraulics

Rockfill in Hydraulic Engineering

Following a concise overview of fluid mechanics informed by numerous engineering applications and examples, this reference presents and analyzes major types of fluid machinery and the major classes of turbines, as well as pump technology. It offers professionals and students in hydraulic engineering with background concepts as well as practical coverage of modern turbine technologies, fully explaining the advantages of both steam and gas turbines. Description, design, and operational information for the Pelton, Francis, Propeller, and Kaplan turbines are provided, as are outlines of various types of power plants. It provides solved examples, chapter problems, and a thorough case study.

Fundamentals of Hydraulic Engineering Systems, Fourth Edition is a very useful reference for practicing engineers who want to review basic principles and their applications in hydraulic engineering systems. This fundamental treatment of engineering hydraulics balances theory with practical design solutions to common engineering problems. The author examines the most common topics in hydraulics, including hydrostatics, pipe flow, pipelines, pipe networks, pumps, open channel flow, hydraulic structures, water measurement devices, and hydraulic similitude and model studies. Chapters dedicated to groundwater, deterministic hydrology, and statistical hydrology make this text ideal for courses designed to cover hydraulics and hydrology in one semester.

Hydraulics of Dam and River Structures

Hydraulic Structures

Hydraulic Engineering of Dams

Entropy Theory in Hydraulic Engineering