

Floating Structures Guide Design Analysis

A thorough understanding of the interaction of waves and currents with offshore structures has now become a vital factor in the safe and economical design of various offshore technologies. There has been a significant increase in the research efforts to meet this need. Although considerable progress has been made in the offshore industry and in the understanding of the interaction of waves, currents, and wind with ocean structures, most of the available books concentrate only on practical applications without a grounding in the physics. This text integrates an understanding of the physics of ocean-structure interactions with numerous applications. This more complete understanding will allow the engineer and designer to solve problems heretofore not encountered, and to design new and innovative structures. The intent of this book is to serve the needs of future generations of engineers designing more sophisticated structures at ever increasing depths.

Covers theoretical concepts in offshore mechanics with consideration to new applications, including offshore wind farms, ocean energy devices, aquaculture, floating bridges, and submerged tunnels This comprehensive book covers important aspects of the required analysis and design of offshore structures and systems and the fundamental background material for offshore engineering. Whereas most of the books currently available in the field use traditional oil, gas, and ship industry examples in order to explain the fundamentals in offshore mechanics, this book uses more recent applications, including recent fixed-bottom and floating offshore platforms, ocean energy structures and systems such as wind turbines, wave energy converters, tidal turbines and hybrid marine platforms. Offshore Mechanics covers traditional and more recent methodologies used in offshore structure modelling (including SPH and hydroelasticity models). It also examines numerical techniques, including computational fluid dynamics and finite element method. Additionally, the book features easy-to-understand exercises and examples. Provides a comprehensive treatment for the case of recent applications in offshore mechanics for researchers and engineers Presents the subject of computational fluid dynamics (CFD) and finite element methods (FEM) along with the high fidelity numerical analysis of recent applications in offshore mechanics Offers insight into the philosophy and power of numerical simulations and an understanding of the mathematical nature of the fluid and structural dynamics with focus on offshore mechanic applications Offshore Mechanics: Structural and Fluid Dynamics for Recent Applications is an important book for graduate and senior undergraduate students in offshore engineering and for offshore engineers and researchers in the offshore industry.

This book gathers the peer-reviewed proceedings of the 14th International Symposium, PRADS 2019, held in Yokohama, Japan, in September 2019. It brings together naval architects, engineers, academic researchers and professionals who are involved in ships and other floating structures to share the latest research advances in the field. The contents cover a broad range of topics, including design synthesis for ships and floating systems, production, hydrodynamics, and structures and materials. Reflecting the latest advances, the book will be of interest to researchers and practitioners alike.

Offshore Structures: Design, Construction and Maintenance, Second Edition covers all types of offshore structures and platforms

employed worldwide. As the ultimate reference for selecting, operating and maintaining offshore structures, this book provides a roadmap for designing structures which will stand up even in the harshest environments. Subsea pipeline design and installation is also covered in this edition, as is the selection of the proper type of offshore structure, the design procedure for the fixed offshore structure, nonlinear analysis (Push over) as a new technique to design and assess the existing structure, and more. With this book in hand, engineers will have the most up-to-date methods for performing a structural lifecycle analysis, implementing maintenance plans for topsides and jackets and using non-destructive testing. Provides a one-stop guide to offshore structure design and analysis Presents easy-to-understand methods for structural lifecycle analysis Contains expert advice for designing offshore platforms for all types of environments

Offshore Semi-Submersible Platform Engineering presents a primer on the analysis and design of semi-submersible platforms, in particular, while also covering general analysis and design guidelines of offshore compliant platforms. It introduces general structural designs and also examines the details of the various environmental impacts that act upon them, such as fatigue, fire, collisions, and water waves. Features Provides thorough coverage of the dynamic analysis and design of semi-submersible platforms Assists readers through detailed analysis methods using MATLAB® as well as other computer programs used to carry out structural analysis Explains impact loading and dynamic response through numerical analysis and examines the various factors that affect semi-submersibles Presented in a coursework teaching style, the content is explained in a step-by-step manner using color figures, photos, screen shots, and illustrations, thereby enabling students, researchers, and practicing engineers to carry out analysis with ease Offshore Semi-Submersible Platform Engineering serves as a practical guide for upper-level students and graduates of various engineering disciplines, for example, naval architecture, and structural, mechanical, pipeline, and offshore engineering. Further, it can also be used as a reference for practicing professionals, as the book covers a broad range of scholarships and applications.

Special edition of the Federal Register, containing a codification of documents of general applicability and future effect ... with ancillaries.

The Code of Federal Regulations is a codification of the general and permanent rules published in the Federal Register by the Executive departments and agencies of the United States Federal Government.

This updated translation from the original German edition provides general background information on oceanology and ocean engineering is given, along with descriptions of drilling techniques, offshore structures and hydrocarbon production at sea. The main part of the book is concerned with the hydrostatic and hydrodynamic analysis of marine structures, followed by an evaluation of marine structure reliability. Environmental conditions affecting marine structures, wave statistics, and the application of reliability theory to code development are also discussed. Students and practising engineers who have an interest in the analysis of marine structures will find this book an invaluable reference.

Publishing papers presented at the Fourth International Conference on Fluid Structure Interactions, this book features contributions from experts specialising in this field on new ideas and the latest techniques. A valuable addition to this successful series and will be of great interest to mechanical and structural engineers, offshore engineers, earthquake engineers, naval engineers and any other experts involved in topics related to fluid structure interaction. Topics covered include: Hydrodynamic Forces; Response of Structures including Fluid Dynamic; Offshore Structure and Ship Dynamics; Fluid Pipeline Interactions; Structure Response to Serve Shock and Blast Loading; Vortex Shedding and Flow Induced Vibrations; Cavitations Effects in Turbo Machines and Pumps; Wind Effects on Bridges and Tall Structures; Mechanics of Cables, Rivers and Moorings; Building Biofluids and Biological Tissue Interaction Problems in CFD; Experimental Studies and Validation; Vibrations and Noise; Free Surface Flows and Moving Boundary Problems.

This book provides a comprehensive guide for the analysis and design of anchor systems used for mooring offshore floating structures. Much of the experience is based on applications toward the offshore oil and gas industry, but the substantial potential for offshore renewable energy systems is addressed. The major types of anchors are described with respect to their basic design concept, advantages and limitations, appropriate framework for analysis, and observed performance. This book addresses all aspects of anchor behaviour related to anchor design including the installation performance, load capacity, deformation, and structural integrity of the anchor itself. Coverage is also provided of appurtenant components of anchor systems, in particular of anchor line/chain mechanics in the soil and water columns. Much of the material presented represents relatively new developments, including several new anchors which have been developed within the last decade, so the book will provide a useful compendium of information is largely scattered in journals and conference proceedings. This book is intended for engineers engaged in offshore geotechnics and marine engineers involved in mooring system and floating structure design. While the analytical methods presented in this text have a strong theoretical basis, the emphasis is on simplified computational formats accessible to design engineers. This volume contains selected and reviewed manuscripts from the 2nd Regional Conference on Mechanical and Marine Engineering (ReMME 2018), 'Sustainable Through Engineering,' which was held from November 7 to 9, 2018, at the Ipoh, Perak, Malaysia. This conference was organized by the Center of Refrigeration and Air Conditioning (CARE) and Center of Marine Engineering (CTME) Politeknik Ungku Omar, Jalan Raja Musa Mahadi, 31400 Ipoh, Perak. It discusses the expertise, skills, and techniques needed for the development of energy and renewable energy system, new materials and biomaterials, and marine technology. It focuses on finite element analysis, computational fluids dynamics, programming and mathematical methods that are used for engineering simulations, and present many state-of-the-art applications. For example, modern joining technologies can be used to fabricate new compound or composite materials,

even those formed from dissimilar component materials. These composite materials are often exposed to harsh environments, must deliver specific characteristics, and are primarily used in automotive and marine technologies, i.e., ships, amphibious vehicles, docks, offshore structures, and even robots. An energy efficient methods such cogeneration, thermal energy storage and solar desalination also being highlighted as sustainable engineering in this book chapter. The committee members can be listed as follows: Patron: Dr. Hj. Zairon Mustapha (Director). Advisor: Muhammad Zubir Mohd Hanifah (Deputy Director Academic), Dr. Azhar Abdullah (Head of Innovation, Research & Commercialization). Chairman 1: Dr. Adzuiéen Nordin. Chairman 2: Hairi Haizri Che Amat. Secretariat 1: Dr. Woo Tze Keong. Secretariat 2: Dr. Saw Chun Lin. Secretary: Mahani Mohd Zamberi, Maslinda Rahmad. Floor Manager: Dr. Adzuiéen Nordin, Marzuki Mohammad Treasurer: Shahrul Nahar Omar Kamal. Webmaster: Mohamad Asyraf Othoman, Mohd Assidiq Che Ahmad, Mohd Hashim Abd. Razak. Proceeding & Editorial: Didi Asmara Salim, Khairil Ashraf Ahmad Maliki, Khirwizam Md Hkhir. Publicity: Nur Azrina Zainal Ariff, Norsheila Buyamin, Rawaida Muhammad, Noor Khairunnisa Kamaruddin. Reviewer: Zakiman Zali, Shahril Jalil. Technical Manager: Mohd Faisal Saad. Springer Publication Editorial: Dr. Saw Chun Lin, Dr. Woo Tze Keong, Didi Asmara Salim, Dr. Salvinder Singh Karam Singh. Protocol & Opening Ceremony: Mohd Rizan Abdul, Yeoh Poh See. Souvenir: Sharifah Zainhuda Syed Tajul Ariffin. Registration: Muhammad Zaki Zainal, Adi Firdaus Hat, Nor Ashimy Mohd Noor, Mohd Naim Awang. Proofread: Shamsul Banu Mohamed Siddik, Fairuz Liza Shuhaimi. Logistics: Mohd Zulhairi Zulkipli, Ahmad Fithri Hasyimie Hashim. Multimedia: Muhammad Redzuan Che Noordin, Mohd Redzuwan Danuri, Ahmad Syawal Yeop Aziz. Liason: Roseazah Ramli, Amrul Zani Mahadi. Sponsorship: Zuraini Gani, Hazril Hisham Hussin.

These proceedings gather a selection of refereed papers presented at the 1st Vietnam Symposium on Advances in Offshore Engineering (VSOE 2018), held on 1–3 November 2018 in Hanoi, Vietnam. The contributions from researchers, practitioners, policymakers, and entrepreneurs address technological and policy changes intended to promote renewable energies, and to generate business opportunities in oil and gas and offshore renewable energy. With a special focus on energy and geotechnics, the book brings together the latest lessons learned in offshore engineering, technological innovations, cost-effective and safer foundations and structural solutions, environmental protection, hazards, vulnerability, and risk management. The book offers a valuable resource for all graduate students, researchers and industrial practitioners working in the fields of offshore engineering and renewable energies.

First published in 1981 as the Offshore Information Guide this guide to information sources has been hailed internationally as an indispensable handbook for the oil, gas and marine industries.

Groundbreaking and comprizing articles by expert contributors, this volume provides a comprehensive treatment of

VLFSs and their relationship with the sea, marine habitats, the pollution of costal waters and tidal and natural current flow. It looks in-depth at: VLFS and the colonization of ocean space with their appearance in the waters off developed coastal cities wave properties, which is essential for estimating the loading on the VLFS as well as for modelling structure-fluid interactions hydroelastic and structural analysis of VLFS at an overall level and the cell level the analysis and design of breakwaters simulation models to understand the actual flow of water through the VLFS and to determine the drift forces for the mooring systems anti-corrosion and maintenance systems new research and developments, with emphasis on the Mega-Float, a 1 km long floating test runway. Well-illustrated with photographs, drawings, equations for mathematical modelling and analysis and extensively referenced, Very Large Floating Structures is ideal for professionals, academics and students of civil and structural engineering.

Ship-shaped offshore units are some of the more economical systems for the development of offshore oil and gas, and are often preferred in marginal fields. These systems are especially attractive to develop oil and gas fields in deep and ultra-deep water areas and remote locations away from existing pipeline infrastructures. Recently, the ship-shaped offshore units have been applied to near shore oil and gas terminals. This 2007 text is an ideal reference on the technologies for design, building and operation of ship-shaped offshore units, within inevitable space requirements. The book includes a range of topics, from the initial contracting strategy to decommissioning and the removal of the units concerned. Coverage includes both fundamental theory and principles of the individual technologies. This book will be useful to students who will be approaching the subject for the first time as well as designers working on the engineering for ship-shaped offshore installations.

A guide to the analysis and design of compliant offshore structures that highlights a new generation of platforms Offshore Compliant Platforms provides an authoritative guide to the analysis and design of compliant offshore structures and puts the focus on a new generation of platforms such as: triceratops, Buoyant Leg Storage and Regasification platforms. Whilst the authors – noted experts on the topic – include basic information on the conceptual development of conventional platforms, the book presents detailed descriptions of the design and development of new deep-water platforms. The book describes the preliminary design of triceratops in ultra-deep waters and presents a detailed analysis of environmental loads that are inherent in offshore locations such as wave, wind and current. The new methodology for the dynamic analysis of triceratops under ice loads, predominantly in ice-covered regions, is also examined with detailed parametric studies. In addition, the book covers the structural geometry and the various methods of analysis for assessing the performance of any other similar offshore platform under the special loads. A discussion of the fatigue analysis and service life prediction is also included. This important book: • Includes the analysis and design of compliant

offshore structures with a focus on a new generation of platforms • Examines the preliminary design of triceratops in ultra-deep waters • Covers an analysis of environmental loads that are inherent in offshore locations such as wave, wind and current • Reviews the structural geometry and various methods of analysis for assessing the performance of any other similar offshore platform under special loads • Discusses fatigue analysis and service life prediction Written for engineers and researchers across engineering including civil, mechanical, structural, offshore, ocean and naval architecture, Offshore Compliant Platforms fills the need for a guide to new offshore platforms that provides an understanding of the behaviour of these structures under different loading conditions.

The mooring system is a vital component of various floating facilities in the oil, gas, and renewables industries. However, there is a lack of comprehensive technical books dedicated to the subject. Mooring System Engineering for Offshore Structures is the first book delivering in-depth knowledge on all aspects of mooring systems, from design and analysis to installation, operation, maintenance and integrity management. The book gives beginners a solid look at the fundamentals involved during mooring designs with coverage on current standards and codes, mooring analysis and theories behind the analysis techniques. Advanced engineers can stay up-to-date through operation, integrity management, and practical examples provided. This book is recommended for students majoring in naval architecture, marine or ocean engineering, and allied disciplines in civil or mechanical engineering. Engineers and researchers in the offshore industry will benefit from the knowledge presented to understand the various types of mooring systems, their design, analysis, and operations. Understand the various types of mooring systems and the theories behind mooring analysis Gain practical experience and lessons learned from worldwide case studies Combine engineering fundamentals with practical applications to solve today's offshore challenges

John Gaythwaite covers the design of marine structures for the berthing, mooring, and repair of vessels, including piers, wharves, bulkheads, quaywalls, dolphins, dry docks, floating docks, and various ancillary structures.

This book - comprised of three separate volumes - presents the recent developments and research discoveries in structural and solid mechanics; it is dedicated to Professor Isaac Elishakoff. This first volume is devoted to the statics and stability of solid and structural members. Modern Trends in Structural and Solid Mechanics 1 has broad scope, covering topics such as: buckling of discrete systems (elastic chains, lattices with short and long range interactions, and discrete arches), buckling of continuous structural elements including beams, arches and plates, static investigation of composite plates, exact solutions of plate problems, elastic and inelastic buckling, dynamic buckling under impulsive loading, buckling and post-buckling investigations, buckling of conservative and non-conservative systems and buckling of micro and macro-systems. This book is intended for graduate students and researchers in the field of theoretical and applied

mechanics.

Marine Structural Design, Second Edition, is a wide-ranging, practical guide to marine structural analysis and design, describing in detail the application of modern structural engineering principles to marine and offshore structures. Organized in five parts, the book covers basic structural design principles, strength, fatigue and fracture, and reliability and risk assessment, providing all the knowledge needed for limit-state design and re-assessment of existing structures. Updates to this edition include new chapters on structural health monitoring and risk-based decision-making, arctic marine structural development, and the addition of new LNG ship topics, including composite materials and structures, uncertainty analysis, and green ship concepts. Provides the structural design principles, background theory, and know-how needed for marine and offshore structural design by analysis Covers strength, fatigue and fracture, reliability, and risk assessment together in one resource, emphasizing practical considerations and applications Updates to this edition include new chapters on structural health monitoring and risk-based decision making, and new content on arctic marine structural design

Subsea production systems, overview of subsea engineering, subsea field development, subsea distribution system. Flow assurance and system engineering. Subsea structure and equipment. Subsea umbilical, risers and flowlines.

Trends in the Analysis and Design of Marine Structures is a collection of the papers presented at MARSTRUCT 2019, the 7th International Conference on Marine Structures held in Dubrovnik, Croatia, 6-8 May 2019. The MARSTRUCT series of Conferences started in Glasgow, UK in 2007, the second event of the series having taken place in Lisbon, Portugal in March 2009, the third in Hamburg, Germany in March 2011, the fourth in Espoo, Finland in March 2013, the fifth in Southampton, UK in March 2015, and the sixth in Lisbon, Portugal in May 2017. This Conference series specialises in dealing with Ships and Offshore Structures, addressing topics in the fields of: - Methods and Tools for Loads and Load Effects - Methods and Tools for Strength Assessment - Experimental Analysis of Structures - Materials and Fabrication of Structures - Methods and Tools for Structural Design and Optimisation - Structural Reliability, Safety and Environmental Protection. Trends in the Analysis and Design of Marine Structures is an essential document for academics, engineers and all professionals involved in the area of analysis and design of Ships and Offshore Structures. About the series: The 'Proceedings in Marine Technology and Ocean Engineering' series is devoted to the publication of proceedings of peer-reviewed international conferences dealing with various aspects of 'Marine Technology and Ocean Engineering'. The Series includes the proceedings of the following conferences: the International Maritime Association of the Mediterranean (IMAM) conferences, the Marine Structures (MARSTRUCT) conferences, the Renewable Energies Offshore (RENEW) conferences and the Maritime Technology (MARTECH) conferences. The 'Marine Technology and Ocean Engineering' series is also open to new conferences that cover topics on the sustainable exploration and exploitation of marine resources in various fields, such as maritime transport and ports, usage of the ocean including coastal areas, nautical activities, the exploration and exploitation of mineral resources, the protection of the marine environment and its resources, and risk analysis, safety and reliability. The aim of the series is to stimulate advanced education and training through the wide dissemination of the results of scientific research.

KEY FEATURES: Provides researchers in Ocean engineering with a thorough review of the latest research in the field Lengthy reports by leading experts A valuable resource for all interested in ocean engineering **DESCRIPTION:** The International Ship and Offshore Congress (ISSC) is a forum for the exchange of information by experts undertaking and applying marine structural research. These three volumes contain the eight technical committee reports, six Specialist Committee and 2 Special Task Committee reports which were presented for the 15th International Ship and Offshore Structures Congress (ISSC 2004) in San Diego USA, between 11th and 15th August 2003. Volume III will be published in 2004 and is to contain the discussion of the reports, the chairmen's reply, the text of the invited Lecture and the congress report of ISSC 2003.

Progress in the Analysis and Design of Marine Structures collects the contributions presented at MARSTRUCT 2017, the 6th International Conference on Marine Structures (Lisbon, Portugal, 8-10 May 2017). The MARSTRUCT series of Conferences started in Glasgow, UK in 2007, the second event of the series having taken place in Lisbon, Portugal in March 2009, the third in Hamburg, Germany in March 2011, the fourth in Espoo, Finland in March 2013, and the fifth in Southampton, UK in March 2015. This Conference series deals with Ship and Offshore Structures, addressing topics in the areas of: - Methods and Tools for Loads and Load Effects - Methods and Tools for Strength Assessment - Experimental Analysis of Structures - Materials and Fabrication of Structures - Methods and Tools for Structural Design and Optimisation, and - Structural Reliability, Safety and Environmental Protection Progress in the Analysis and Design of Marine Structures is essential reading for academics, engineers and all professionals involved in the design of marine and offshore structures.

A new generation of MEMS books has emerged with this cohesive guide on the design and analysis of micro-electro-mechanical systems (MEMS). Leading experts contribute to its eighteen chapters that encompass a wide range of innovative and varied applications. This publication goes beyond fabrication techniques covered by earlier books and fills a void created by a lack of industry standards. Subjects such as transducer operations and free-space microsystems are contained in its chapters. Satisfying a demand for literature on analysis and design of microsystems the book deals with a broad array of industrial applications. This will interest engineering and research scientists in industry and academia.

This book provides background and guidance on the use of the structural hot-spot stress approach to fatigue analysis. The book also offers Design S-N curves for use with the structural hot-spot stress for a range of weld details, and presents parametric formulas for calculating stress increases due to misalignment and structural discontinuities. Highlighting the extension to structures fabricated from plates and non-tubular sections. The structural hot-spot stress approach focuses on cases of potential fatigue cracking from the weld toe and it has been in use for many years in tubular joints. Following an explanation of the structural hot-spot stress, its definition and its relevance to fatigue, the book describes methods for its determination. It considers stress determination from both finite element analysis and strain gauge measurements, and emphasizes the use of finite element stress analysis, providing guidance on the choice of element type and size for use with either solid or shell elements. Lastly, it illustrates the use of the recommendations in four case studies involving the fatigue assessment of welded structures using the structural hot-spot stress

Floating Structures A Guide for Design and Analysis Floating Structures A Guide for Design and Analysis, Vol.2 Floating Structures A Guide for Design and Analysis. Chapter 7 - 15 Very Large Floating Structures CRC Press

Offshore Wind Farms: Technologies, Design and Operation provides the latest information on offshore wind energy, one of Europe's most promising and quickly maturing industries, and a potentially huge untapped renewable energy source which could contribute significantly

towards EU 20-20-20 renewable energy generation targets. It has been estimated that by 2030 Europe could have 150GW of offshore wind energy capacity, meeting 14% of our power demand. *Offshore Wind Farms: Technologies, Design and Operation* provides a comprehensive overview of the emerging technologies, design, and operation of offshore wind farms. Part One introduces offshore wind energy as well as offshore wind turbine siting with expert analysis of economics, wind resources, and remote sensing technologies. The second section provides an overview of offshore wind turbine materials and design, while part three outlines the integration of wind farms into power grids with insights to cabling and energy storage. The final section of the book details the installation and operation of offshore wind farms with chapters on condition monitoring and health and safety, amongst others. Provides an in-depth, multi-contributor, comprehensive overview of offshore technologies, including design, monitoring, and operation Edited by respected and leading experts in the field, with experience in both academia and industry Covers a highly relevant and important topic given the great potential of offshore wind power in contributing significantly to EU 20-20-20 renewable energy targets

Marine Design XIII collects the contributions to the 13th International Marine Design Conference (IMDC 2018, Espoo, Finland, 10-14 June 2018). The aim of this IMDC series of conferences is to promote all aspects of marine design as an engineering discipline. The focus is on key design challenges and opportunities in the area of current maritime technologies and markets, with special emphasis on: • Challenges in merging ship design and marine applications of experience-based industrial design • Digitalisation as technological enabler for stronger link between efficient design, operations and maintenance in future • Emerging technologies and their impact on future designs • Cruise ship and icebreaker designs including fleet compositions to meet new market demands To reflect on the conference focus, *Marine Design XIII* covers the following research topic series: •State of art ship design principles - education, design methodology, structural design, hydrodynamic design; •Cutting edge ship designs and operations - ship concept design, risk and safety, arctic design, autonomous ships; •Energy efficiency and propulsions - energy efficiency, hull form design, propulsion equipment design; •Wider marine designs and practices - navy ships, offshore and wind farms and production. *Marine Design XIII* contains 2 state-of-the-art reports on design methodologies and cruise ships design, and 4 keynote papers on new directions for vessel design practices and tools, digital maritime traffic, naval ship designs, and new tanker design for arctic. *Marine Design XIII* will be of interest to academics and professionals in maritime technologies and marine design.

Sustainable Maritime Transportation and Exploitation of Sea Resources covers the most updated aspects of maritime transports and of coastal and sea resources exploitation, with a focus on (but not limited to) the Mediterranean area. Vessels for transportation are analysed from the viewpoint of ship design in terms of hydrodynamic, structural and plant optimisation, as well as from the perspective of construction, maintenance, operation and logistics. The exploitation of marine and coastal resources is covered in terms of fishing, aquaculture and renewable energy production as well as of subsea resources extraction. The characterisation of the marine environment is seen under the twofold perspective of providing reference loads and conditions for the design of means for the resources exploitation, but also of setting limits to the design in order to preserve the natural ambient and minimise the impact of anthropogenic activities related to both transportation and exploitation. Efficiency, reliability, safety and

sustainability of sea- and Mediterranean-related human activities are the focus throughout the book. Sustainable Maritime Transportation and Exploitation of Sea Resources will be of interest to technical operators in the various areas involved (shipbuilding and ship-owner companies, research organisations, universities, certifying bodies), but will also serve as an updated reference work for government agencies and other institutional and educational bodies.

Wind turbines are one of the most promising renewable energy technologies, and this motivates fertile research activity about developments in power optimization. This topic covers a wide range of aspects, from the research on aerodynamics and control design to the industrial applications about on-site wind turbine performance control and monitoring. This Special Issue collects seven research papers about several innovative aspects of the multi-faceted topic of wind turbine power optimization technology. The seven research papers deal respectively with the aerodynamic optimization of wind turbine blades through Gurney flaps; optimization of blade design for large offshore wind turbines; control design optimization of large wind turbines through the analysis of the competing objectives of energy yield maximization and fatigue loads minimization; design optimization of a tension leg platform for floating wind turbines; innovative methods for the assessment of wind turbine optimization technologies operating on site; optimization of multiple wake interactions modeling through the introduction of a mixing coefficient in the energy balance method; and optimization of the dynamic stall control of vertical-axis wind turbines through plasma actuators. This Special Issue presents remarkable research activities in the timely subject of wind turbine power optimization technology, covering various aspects. The collection is believed to be beneficial to readers and contribute to the wind power industry.

Engineering system dynamics focuses on deriving mathematical models based on simplified physical representations of actual systems, such as mechanical, electrical, fluid, or thermal, and on solving these models for analysis or design purposes. System Dynamics for Engineering Students: Concepts and Applications features a classical approach to system dynamics and is designed to be utilized as a one-semester system dynamics text for upper-level undergraduate students with emphasis on mechanical, aerospace, or electrical engineering. It is the first system dynamics textbook to include examples from compliant (flexible) mechanisms and micro/nano electromechanical systems (MEMS/NEMS). This new second edition has been updated to provide more balance between analytical and computational approaches; introduces additional in-text coverage of Controls; and includes numerous fully solved examples and exercises. Features a more balanced treatment of mechanical, electrical, fluid, and thermal systems than other texts Introduces examples from compliant (flexible) mechanisms and MEMS/NEMS Includes a chapter on coupled-field systems Incorporates MATLAB® and Simulink® computational software tools throughout the book Supplements the text with extensive instructor support available online: instructor's solution manual, image bank, and PowerPoint lecture slides NEW FOR THE SECOND EDITION Provides more balance between analytical and computational approaches, including integration of Lagrangian equations as another modelling technique of dynamic systems Includes additional in-text coverage of Controls, to meet the needs of schools that cover both controls and system dynamics in the course Features a broader range of applications, including additional applications in pneumatic and hydraulic systems, and new applications in aerospace, automotive,

and bioengineering systems, making the book even more appealing to mechanical engineers. Updates include new and revised examples and end-of-chapter exercises with a wider variety of engineering applications.

"This book provides a comprehensive guide for the analysis and design of anchor systems used for mooring offshore floating structures. Much of the experience is based on applications toward the offshore oil and gas industry, but the substantial potential for offshore renewable energy systems is addressed. The major types of anchors are described with respect to their basic design concept, advantages and limitations, appropriate framework for analysis, and observed performance. This book addresses all aspects of anchor behaviour related to anchor design including the installation performance, load capacity, deformation, and structural integrity of the anchor itself. Coverage is also provided of appurtenant components of anchor systems, in particular of anchor line/chain mechanics in the soil and water columns. Much of the material presented represents relatively new developments, including several new anchors which have been developed within the last decade, so the book will provide a useful compendium of information is largely scattered in journals and conference proceedings. This book is intended for engineers engaged in offshore geotechnics and marine engineers involved in mooring system and floating structure design. While the analytical methods presented in this text have a strong theoretical basis, the emphasis is on simplified computational formats accessible to design engineers."--Provided by publisher.

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