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Offshore Construction - Stuart Beadnall 2021-12-30

This updated book provides practical guidance on avoiding and resolving disputes in the construction of offshore units and vessels, including FPSOs, drilling units, OSVs, FLNG, FSRU and fixed platforms. Written by a leading team at Stephenson Harwood, it covers the entire construction process from initial concept right through to installation, at each stage commenting on typical contract terms and offering expert advice based on real-life examples. With 30 per cent of the world's oil and gas production coming from offshore areas, the construction of specialist vessels to perform offshore operations is a crucial part of the industry. However, with exploration and production being performed in increasingly exacting locations, the scope for disputes arising from cost overruns, scheduling delays and technical difficulties is immense. This second edition has been updated to include new case law as well as a new chapter on financing. The existing chapters will feature more information on payment mechanisms and on transportation and installation. This unique text will be of enormous assistance both to legal practitioners and offshore construction professionals including project managers, financiers, insurers and subcontractors.

Advances in Manufacturing Engineering - Seyed Sattar Emamian 2020-08-31

This book presents selected papers from the 5th International Conference on Mechanical, Manufacturing and Plant Engineering (ICMMPE 2019), held in Kuala Lumpur, Malaysia. It highlights the latest advances in the area, brings together researchers and professionals in the field and provides a valuable platform for exchanging ideas and fostering collaboration. Joining technologies could be change to manufacturing technologies. Addressing real-world problems concerning joining technologies that are at the heart of various manufacturing sectors, the respective papers present the outcomes of the latest experimental and numerical work on problems in soldering, arc welding and solid-state joining technologies. technologies. technologies. technologies. technologies. technologies. technologies. technologies. technologies. technologies. technologies.

Encyclopedia of Ocean Engineering - Weicheng Cui 2022-06-29

This encyclopedia adopts a wider definition for the concept of ocean engineering. Specifically, it includes (1) offshore engineering: fixed and floating offshore oil and gas platforms; pipelines and risers; cables and moorings; buoy technology; foundation engineering; ocean mining; marine and offshore renewable energy; aquaculture engineering; and subsea engineering; (2) naval architecture: ship and special marine vehicle design; intact and damaged stability; technology for energy efficiency and green shipping; ship production technology; decommissioning and recycling; (3) polar and Arctic Engineering: ice mechanics; ice-structure interaction; polar operations; polar design; environmental protection; (4) underwater technologies: AUV/ROV design; AUV/ROV hydrodynamics; maneuvering and control; and underwater-specific communicating and sensing systems for AUV/ROVs. It summarizes the A-Z of the background and application knowledge of ocean engineering for use by ocean scientists and ocean engineers as well as nonspecialists such as engineers and scientists from all disciplines, economists, students, and politicians. Ocean engineering theories, ocean devices and equipment, ocean design and operation technologies are described by international experts, many from industry and each entry offers an introduction and references

for further study, making current technology and operating practices available for future generations to learn from. The book also furthers our understanding of the current state of the art, leading to new and more efficient technologies with breakthroughs from new theory and materials. As the land resources approach the exploitation limit, ocean resources are becoming the next choice for the sustainable development. As such, ocean engineering is vital in the 21st century. **Dynamic Analysis and Design of Offshore Structures** - Srinivasan Chandrasekaran 2017-10-12

This book introduces readers to various types of offshore platform geometries. It addresses the various environmental loads encountered by these structures, and provides detailed descriptions of the fundamentals of structural dynamics in a classroom style, helping readers estimate damping in offshore structures and grasp these aspects' applications in preliminary analysis and design. Basic concepts of structural dynamics are emphasized through simple illustrative examples and exercises. Design methodologies and guidelines, which are FORM based concepts, are explained through a selection of applied sample structures. Each chapter also features tutorials and exercises for self-learning. A dedicated chapter on stochastic dynamics helps students to extend the basic concepts of structural dynamics to this advanced domain of research. Hydrodynamic response of offshore structures with perforated members is one of the most recent research applications, and has proven to be one of the most effective means of retrofitting offshore structures. In addition, the book integrates the concepts of structural dynamics with the FORM-evolved design of offshore structures, offering a unique approach. This new edition is divided into seven chapters, each of which has been updated. Each chapter also includes a section on frequently asked Questions and Answers (Q&A), which enhances understanding of this complex subject through easy and self-explanatory text. Furthermore, the book presents valuable content with respect to new and recent research carried out by the author in structural dynamics. All numeric examples have been re-checked with more additional explanations. New exercises have been added to improve understanding of the subject matter. Computer coding is also included (wherever possible) to aid computer-based learning of the contents of the book. The book can serve as a textbook for senior undergraduate and graduate courses in civil, structural, applied mechanics, mechanical, aerospace, naval architecture and ocean engineering programs. The book can also serve as a text for professional learning and development programs or as a guide for practicing and consulting offshore structural engineers. The contents of this book will be useful to graduate students, researchers, and professionals alike.

JPT. Journal of Petroleum Technology - 2009-07

Marine Structural Design - Yong Bai 2015-09-18

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

Asian Oil & Gas - 2007

Handbook of Offshore Engineering (2-volume set) - Subrata Chakrabarti 2005-06-21

* Each chapter is written by one or more invited world-renowned experts * Information provided in handy reference tables and design charts * Numerous examples demonstrate how the theory outlined in the book is applied in the design of structures Tremendous strides have been made in the last decades in the advancement of offshore exploration and production of minerals. This book fills the need for a practical reference work for the state-of-the-art in offshore engineering. All the basic background material and its application in offshore engineering is covered. Particular emphasis is placed in the application of the theory to practical problems. It includes the practical aspects of the offshore structures with handy design guides, simple description of the various components of the offshore engineering and their functions. The primary purpose of the book is to provide the important practical aspects of offshore engineering without going into the nitty-gritty of the actual detailed design. · Provides all the important practical aspects of ocean engineering without going into the 'nitty-gritty' of actual design details. · Simple to use - with handy design guides, references tables and charts. · Numerous examples demonstrate how theory is applied in the design of structures

Proceedings - Offshore Technology Conference - 2001

Engineering Challenges for Sustainable Future - Noor Amila Wan Abdullah Zawawi 2016-12-01

Engineering Challenges for Sustainable Future contains the papers presented at the 3rd International Conference on Civil, Offshore & Environmental Engineering (ICCOEE2016, Kuala Lumpur, Malaysia, 15-17 August 2016), under the banner of World Engineering, Science & Technology Congress (ESTCON2016). The ICCOEE series of conferences started in Kuala Lumpur, Malaysia 2012, and the second event of the series took place in Kuala Lumpur, Malaysia 2014. This conference series deals with the civil, offshore & environmental engineering field, addressing the following topics: · Environmental and Water Resources Engineering · Coastal and Offshore Engineering · Structures and Materials · Construction and Project Management · Highway, Geotechnical and Transportation Engineering and Geo-informatics This book is an essential reading for academic, engineers and all professionals involved in the area of civil, offshore and environmental engineering.

Dictionary of Oil, Gas, and Petrochemical Processing - Alireza Bahadori 2013-12-04

In industry, miscommunication can cause frustration, create downtime, and even trigger equipment failure. By providing a common ground for more effective discourse, the Dictionary of Oil, Gas, and Petrochemical Processing can help eliminate costly miscommunication. An essential resource for oil, gas, and petrochemical industry professionals, engineer

Guide to Single Point Moorings - Johan Wichers 2013-07-11

This book covers many different aspects of single point mooring systems. A single point mooring system is used to keep a vessel stationed at a fixed location. These vessels can for instance be a Floating Production Storage and Offloading System or Floating Storage and offloading system. Hundreds of these systems are operational today. The first part of this book shows a little history of the origins of oil

and gas and the current supply and demand for oil. This book also shows some of the history of the development of the single point mooring systems. It also addresses the many different aspects of designing these types of systems. This book will also go into the detail of the hydrodynamics and loadings that act on these vessels by wind and waves and the behavior of the different types of mooring systems.

Offshore Floating Production - Max Lemanski 2023-01-16

This is the first book to focus on the law and practice relating to offshore oil and gas floating production. It deals with all legal and commercial risk management issues from initial concept through design, construction, modification, installation, acceptance, production and offloading, including ancillary legal topics; JV/consortiums, financing, insurance, decommissioning and intellectual property. Floating production projects are a popular method of achieving offshore oil and gas production, utilising vessels sitting over the offshore reservoir, receiving well fluids which are then processed, stored and offloaded to tankers. They operate in deep water, harsh conditions and marginal fields, and may be redeployed once the reservoir is depleted. There are numerous legal issues which arise in the context of floating production due to its specific characteristics, presenting a unique combination of challenges with the attendant risks and potential liabilities. This book analyses these risks and liabilities and considers how they may be allocated between the parties, how the consequences are avoided or mitigated and how disputes are in practice resolved. It illustrates these issues and competing legal arguments by focusing on each stage of the relationship between the oil and gas company and a specialist floating production contractor. The book will be of special interest to project managers and in-house lawyers at oil companies, offshore contractors, design consultants, construction companies, suppliers, vessel operators, banks, insurers and investors. It will also be of particular use to private practice lawyers in all jurisdictions where these projects occur; because contracts used in this industry are often written under English law, and contracts which are governed by local law follow a similar pattern.

Proposed Use of Floating Production, Storage, and Offloading Systems on the Gulf of Mexico Outer Continental Shelf, Western and Central Planning Areas - 2000

The Chemical Engineer - 2003

Practical Design of Ships and Other Floating Structures - Tetsuo Okada 2020-10-03

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.

Ullmann's Energy - Wiley-VCH 2017-06-02

This three-volume handbook contains a wealth of information on energy sources, energy generation and storage, fossil and renewable fuels as well as the associated processing technology. Fossil as well as renewable fuels, nuclear technology, power generation and storage technologies are treated side by side, providing a unique overview of the entire global energy industry. The result is an in-depth survey of industrial-scale energy technology. Your personal ULLMANN'S: A carefully selected "best of" compilation of topical articles brings the vast knowledge of the Ullmann's encyclopedia to the desks of energy and process engineers Chemical and physical characteristics, production processes and production figures, main applications, toxicology and safety information are all found here in one single resource New or updated articles include classical topics such as coal technologies, oil and gas as well as cutting-edge technologies like biogas, thermoelectricity and solar technology 3 Volumes

Practical Design of Ships and Other Floating Structures - You-Sheng Wu 2001-08-22
This proceedings contains the papers presented at The 8th International Symposium on Practical Design of Ships and Other Floating Structures held in China in September 2001 - the first PRADS of the 21st Century. The overall aim of PRADS symposia is to advance the design of ships and other floating structures as a professional discipline and science by exchanging knowledge and promoting discussion of relevant topics in the fields of naval architecture and marine and offshore engineering. In line with the aim, in welcoming the new era, this Symposium is intended to increase international co-operation and give a momentum for the new development of design and production technology of ships and other floating structures for efficiency, economy, safety, and environmental production. The main themes of this Symposium are Design Synthesis, Production, Hydrodynamics, Structures and Materials of Ships and Floating Systems. Proposals for over 270 papers from 26 countries and regions within the themes were received for PRADS 2001, and about 170 papers were accepted for presentation at the symposium. With the high quality of the proposed papers the Local Organising Committee had a difficult task to make a balanced selection and to control the total number of papers for fitting into the allocated time schedule approved by the Standing Committee of PRADS. Volume I covers design synthesis, production and part of hydrodynamics. Volume II contains the rest of hydrodynamics, and structures and materials.

Shipping and Ports in the Twenty-first Century - David Pinder 2004-05-20
Shipping and port systems are vital to societies and lifestyles around the world. In the late twentieth century, however, assumptions concerning the robustness of these systems were severely shaken by economic shocks triggered by oil crises. This volume explores how many of the consequent uncertainties have been resolved, and how adapted systems have been shaped to meet the challenges of the new millennium. To explore these issues, contributors focus on issues such as: · economic integration of emerging economies - in particular China · sectors as diverse as the high-speed ferry and offshore oil industries · pollution problems generated by shipping Contributors' investigations, such as those into the homogenisation of the container industry and the port cluster concept and 'model' vessels for the offshore oil industry, make for a rewarding book that will be of interest to academics working in many fields including transport studies, marine and coastal studies and economic geography. Professional organizations and policy-makers will also appreciate the book.

Mechanics of Offshore Pipelines: Volume I - Stelios Kyriakides 2003-01-20
Mechanics of Offshore Pipelines, Second Edition, Volume One: Buckling and Collapse gives engineers fundamental knowledge on principles surrounding the mechanical behavior of pipelines and long tubular structures in the oil and gas industry. Addressing common challenges pertaining to buckling and collapse under various offshore loads, the authors go through each challenge experimentally, with supporting and analyzing data to present the main limits encountered. Helpful to both the practicing engineer and the graduate level, the combined effort of analysis supplemented with numerical modeling helps engineers design procedures and guidelines to reproduce the best solution or solve problems using a nonlinear finite element code. Custom formulations are also included to help users gain a deeper understanding of each challenge. Rounding out with helpful appendices, including a glossary of terms, this book continues to deliver critical research and data to engineers that need to design, install and maintain efficient and safe offshore pipelines. Updated to include more practical aspects, such as failure of corroded pipes under external pressure and response of bi-material under bending Delves into cost-effective materials and installation techniques Covers guidelines, practicing methods and recommendations on maintenance and design Recommended as the "bible" for offshore pipelines Explains the full spectrum of classical challenges, such as inelastic structural mechanics and the newest technological demands

Twenty-Fourth Symposium on Naval Hydrodynamics - National Research Council 2003-11-15

This report is part of a series of reports that summarize this regular event. The report discusses research developments in ship design, construction, and operation in a forum that encouraged both formal and informal discussion of presented papers.

Introduction to Marine Cargo Management - Mark Rowbotham 2014-03-21
Cargo management, especially in the maritime sphere, plays a vital role in the transfer of goods between seller and buyer. However, despite over 90% of the world's international trade being conducted by sea, often very little is known about this subject by either party. This unique text provides a clear and comprehensive introduction to the principal elements involved in the management of marine cargo and the carriage of goods by sea. Not only does it analyse key theories and debates in the maritime freight sector, it is equally instructive on practice and logistics. Furthermore, the book provides a thorough guide to the roles and responsibilities of all parties involved in this dynamic industry. This second edition has been fully revised and updated to incorporate the very latest changes in cargo management legislation and procedures, including: Offshore oil & gas supply management The revised INCOTERMS 2010 Tramp shipping and spot cargo trading Project cargo management Dry and liquid bulk cargo management The IMDG Code and the marine carriage of dangerous and hazardous goods Cabotage Salvage Risk management and best practice This is an essential guide for shipping professionals, academics and students of marine logistics, and international trade.

Ship-Shaped Offshore Installations - Jeom Kee Paik 2007-01-15
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.

Safety of Sea Transportation - Adam Weintrit 2017-07-14
Safety of Sea Transportation is the second of two Conference Proceedings of TransNav 2017, June 21-23 in Gdynia, Poland. Safety of Sea Transportation will focus on the following themes: Sustainability, intermodal and multimodal transportation Safety and hydrodynamic study of hydrotechnical structures Bunkering and fuel consumption Gases emission, water pollution and environmental protection Occupational accidents Supply chain of blocks and spare parts Electrotechnical problems Ships stability and loading strength Cargo loading and port operations Maritime Education and Training (MET) Human factor, crew manning and seafarers problems Economic analysis Mathematical models, methods and algorithms Fishery Legal aspects Aviation

The Petroleum Economist - 2007

Risk Management in the Oil and Gas Industry - Gerardo Portela Da Ponte Jr 2021-06-09

Risk Management in the Oil and Gas Industry: Offshore and Onshore Concepts and Case Studies delivers the concepts, strategies and good practices of offshore and onshore safety engineering that are applicable to petroleum engineering and immediately surrounding industries. Guided by the strategic risk management line, this reference organizes steps in order of importance and priority that should be given to the themes in the practical exercise of risk management activities, from the conceptual and design phase to operational and crisis management situations. Each chapter is packed with practical case studies, lessons learned, exercises,

and review questions. The reference also touches on the newest techniques, including liquefied natural gas (cryogenics) operations and computer simulations that contemplate the influence of human behavior. Critical for both the new and experienced engineer, this book gives the best didactic tool to perform operations safely and effectively. Helps readers by presenting practical case studies and exercises that are included in every chapter Presents an understanding on how to approach and apply best practices specific to the oil and gas industry, both offshore and onshore Provides the knowledge needed to gain new techniques in computer simulation and human factors to apply to various sectors of the industry, including subsea and refineries

Practical Aspects of Flow Assurance in the Petroleum Industry - Jitendra Sangwai 2022-07-07

With easily accessible oil reserves dwindling, petroleum engineers must have a sound understanding of how to access technically challenging resources, especially in the deepwater environment. These technically challenging resources bring with them complexities around fluid flow not normally associated with conventional production systems, and engineers must be knowledgeable about navigating these complexities. Practical Aspects of Flow Assurance in the Petroleum Industry aims to provide practical guidance on all aspects of flow assurance to offer readers a ready reference on how to ensure uninterrupted transport of processed fluids throughout the flow infrastructure by covering all practical aspects of flow assurance, being written in such a way that any engineer dealing with the oil and gas industry will be able to understand the material, containing solved examples on most topics, placing equal emphasis on experimental techniques and modeling methods, and devoting an entire chapter to the analysis and interpretation of published case studies. With its balance of theory and practical applications, this work provides petroleum engineers from a variety of backgrounds with the information needed to maintain and enhance productivity.

Offshore Operations and Engineering - Shashi Shekhar Prasad Singh 2019-12-06

This book provides a comprehensive understanding of each aspect of offshore operations including conventional methods of operations, emerging technologies, legislations, health, safety and environment impact of offshore operations. The book starts by coverage of notable offshore fields across the globe and the statistics of present oil production, covering all types of platforms available along with their structural details. Further, it discusses production, storage and transportation, production equipment, safety systems, automation, storage facilities and transportation. Book ends with common legislation acts and comparison of different legislation acts of major oil/gas producing nations. The book is aimed at professionals and researchers in petroleum engineering, offshore technology, subsea engineering, and Explores the engineering, technology, system, environmental, operational and legislation aspects of offshore productions systems Covers most of the subsea engineering material in a concise manner Includes legislation of major oil and gas producing nations pertaining to offshore operations (oil and gas) Incorporates case studies of major offshore operations (oil and gas) accidents and lessons learnt Discusses environment impact of offshore operations

Basic Offshore Safety - Abdul Khaliq 2015-10-05

Comprehensive insight into the offshore oil and gas industry for those intending to choose it as a career Full syllabus coverage for OPITO BOSIET, FOET, MIST and IMIST courses Produced in full colour with over 180 images Basic Offshore Safety covers everything that newcomers to the offshore oil and gas industry need to know prior to travelling offshore or when attending OPITO's Basic Offshore Safety Induction and Emergency Training (BOSIET), Minimum Industry Safety Training (MIST), Further Offshore Emergency Training (FOET) and International MIST courses. Primarily focused on the oil industry, this book introduces readers to the key safety topics in the offshore support vessel industry and common to the renewable industry. Written in easy to follow steps and including references to both the legislation and guidance where relevant, Abdul Khaliq walks the reader through the hazards they are likely to encounter when travelling to, from or working

offshore, showing how to minimise risks and deal with any issues that may arise at any stage of the work.

Analysis and Design of Marine Structures V - C. Guedes Soares 2015-03-11

Analysis and Design of Marine Structures V contains the papers presented at MARSTRUCT 2015, the 5th International Conference on Marine Structures (Southampton, UK, 25-27 March 2015). The MARSTRUCT series of conferences started in Glasgow, UK in 2007, the second event of the series took place in Lisbon, Portugal (2009), while the third was in Hambur

Offshore Petroleum Drilling and Production - Sukumar Laik 2018-02-01

The key focus of the book is on engineering aspects of the subject field Updated, comprehensive text covering offshore drilling, production and field development and offers complete coverage of offshore oil and gas operations. Also, key maintenance issues like pigging, corrosion, subsidence are discussed.

Mooring System Engineering for Offshore Structures - Kai-Tung Ma 2019-06-04

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

Buckling and Ultimate Strength of Ship and Ship-like Floating Structures - Tetsuya Yao 2016-08-11

Buckling and Ultimate Strength of Ship and Ship-like Floating Structures provides an integrated state-of-the-art evaluation of ship structure mechanics including buckling, plastic failure, ultimate strength, and ultimate bending moments. For the design of any industrial product, it is necessary to understand the fundamentals in the failure behavior of structures under extreme loads. Significant developments have been made in understanding the analysis method of plastic collapse and behavior and strength of structures accompanied by buckling. Written by two of the foremost experts in international ship design and ocean engineering, this book introduces fundamental theories and methods as well as new content on the behavior of buckling/plastic collapse that help explain analysis like the initial imperfections produced by welding and the ultimate strength of plates, double bottom structures of bulk carriers, and ship and FPSO hull girders in longitudinal bending. Rounding out with additional coverage on floating structures such as oil and gas platforms and LNG/FLNG structural characteristics, Buckling and Ultimate Strength of Ship and Ship-like Floating Structures is a must-have resource for naval architects and other marine engineering professionals seeking to gain an in-depth understanding of the technological developments in this area. Explains how the initial imperfections produced by welding, residual stress, and initial deflection in panels influence the collapse behavior and the compressive ultimate strength of rectangular plates Evaluates the ultimate strength of plate girders under bending and shearing as well as combined bend/shear loads Provides fundamental theories, simple formulas, and analytical methods such as Finite Element Method or Smith's Method to simulate and evaluate buckling/plastic collapse behavior and strength of plates under various conditions Authored by two of the foremost experts in international ship design and ocean engineering Includes additional coverage on floating structures such as oil and

gas platforms

International Petroleum Encyclopedia - Oil & Gas Journal 2002-09

This encyclopedia and atlas overviews industry developments during 2001 in each oil-producing country around the world. The 97 entries review such topics as capital investments, exploration, discoveries, markets, and pricing. Color maps of each country or region indicate the location of oil and gas

Handbook of Marine Craft Hydrodynamics and Motion Control - Thor I. Fossen
2011-05-23

The technology of hydrodynamic modeling and marine craft motion control systems has progressed greatly in recent years. This timely survey includes the latest tools for analysis and design of advanced guidance, navigation and control systems and presents new material on underwater vehicles and surface vessels. Each section presents numerous case studies and applications, providing a practical understanding of how model-based motion control systems are designed. Key features include: a three-part structure covering Modeling of Marine Craft; Guidance, Navigation and Control Systems; and Appendices, providing all the supporting theory in a single resource kinematics, kinetics, hydrostatics, seakeeping and maneuvering theory, and simulation models for marine craft and environmental forces guidance systems, sensor fusion and integrated navigation systems, inertial measurement units, Kalman filtering and nonlinear observer design for marine craft state-of-the-art methods for feedback control more advanced methods using nonlinear theory, enabling the user to compare linear design techniques before a final implementation is made. linear and nonlinear stability theory, and numerical methods companion website that hosts links to lecture notes and download information for the Marine Systems Simulator (MSS) which is an open source Matlab/Simulink® toolbox for marine systems. The MSS toolbox includes hydrodynamic models and motion control systems for ships, underwater vehicles and floating structures With an appropriate balance between mathematical theory and practical applications, academic and industrial researchers working in marine and control engineering aspects of manned and unmanned maritime vehicles will benefit from this comprehensive handbook. It is also suitable for final year undergraduates and postgraduates, lecturers, development officers, and practitioners in the areas of rigid-body modeling, hydrodynamics, simulation of marine craft, control and estimation theory, decision-support systems and sensor fusion.

www.wiley.com/go/fossen_marine

Hart's E & P. - 2003

Fundamentals of Floating Production Systems - Niladri Kumar Mitra 2009-01-20

The book "Fundamentals of Floating Production Systems" provides a basic and fundamental knowledge of all the components, equipment, facilities and system for any floating production system and sub-sea production system. The flow of the book

is simple, concepts are illustrative and coverage is quite comprehensive. The book, through a given case study, provides an implicit understanding of the various facets that requires to be understood while planning for a field development with floating production systems in conjunction with sub-sea production systems. Aimed at undergraduate students in academics and for the beginners in the industry, this book is a foundation that is a must to understand the higher dimensions of these concepts once they join the industry.

Proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018)
- K. Murali 2019-01-16

This book comprises selected proceedings of the Fourth International Conference in Ocean Engineering (ICOE2018), focusing on emerging opportunities and challenges in the field of ocean engineering and offshore structures. It includes state-of-the-art content from leading international experts, making it a valuable resource for researchers and practicing engineers alike.

Maritime Engineering and Technology - Carlos Guedes Soares 2012-11-26

Maritime Engineering and Technology includes the papers from the 1st International Conference on Maritime Technology and Engineering (MARTECH 2011, Lisbon, Portugal, 10-12 May 2011). MARTECH 2011 was held to commemorate 100 years of the Instituto Superior Tico (IST) in Lisbon, and the contributions in the present volume reflect the

Mechanics of Offshore Pipelines - Stelios Kyriakides 2007-07-26

Offshore oil and gas production was conducted throughout the entire 20th century, but the industry's modern importance and vibrancy did not start until the early 1970s, when the North Sea became a major producer. Since then, the expansion of the offshore oil industry has been continuous and rapid. Pipelines, and more generally long tubular structures, are major oil and gas industry tools used in exploration, drilling, production, and transmission. Installing and operating tubular structures in deep waters places unique demands on them. Technical challenges within the field have spawned significant research and development efforts in a broad range of areas. Volume I addresses problems of buckling and collapse of long inelastic cylinders under various loads encountered in the offshore arena. Several of the solutions are also directly applicable to land pipelines. The approach of Mechanics of Offshore Pipelines is problem oriented. The background of each problem and scenario are first outlined and each discussion finishes with design recommendations. * New and classical problems addressed - investigated through a combination of experiments and analysis * Each chapter deals with a specific mechanical problem that is analyzed independently * The fundamental nature of the problems makes them also applicable to other fields, including tubular components in nuclear reactors and power plants, aerospace structures, automotive and civil engineering structures, naval vehicles and structures