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Offshore Structural Engineering Applied Offshore Structural Engineering Offshore Structural Engineering Applied Offshore Structural Engineering Offshore Structures Essentials of Offshore Structures Ageing and Life Extension of Offshore Structures Marine Structural Design Structural Health Monitoring With Application To Offshore Structures Nonlinear Analysis of Offshore Structures Modern Earthquake Engineering Tubular Members in Offshore Structures Dynamic Analysis and Design of Offshore Structures Offshore Structure Modeling Offshore Semi-Submersible Platform Engineering Marine Structural Design Calculations Mooring System Engineering for Offshore Structures Handbook of Bottom Founded Offshore Structures Design Aids of Offshore Structures Under Special Environmental Loads including Fire Resistance Marine Structures Engineering: Specialized Applications Structural Health Monitoring with Application to Offshore Structures Integrity of Offshore Structures Subsea Engineering Handbook Dynamics of Offshore Structures Advanced Marine Structures Assessment, Evaluation, and Repair of Concrete, Steel, and Offshore Structures Offshore Mechanics Safety Levels Implied in Offshore Structural Design Codes Dynamics of Fixed Marine Structures Dynamics of Offshore Structures Tubular Members in Offshore Structures Offshore Projects and Engineering Management Practical Engineering Management of Offshore Oil and Gas Platforms Asset Integrity Management for Offshore and Onshore Structures Design Aids for Offshore Topside Platforms Under Special Loads Offshore Structures The Story of Offshore Arctic Engineering Stochastic Analysis of Offshore Steel Structures Ocean Structures Advanced Steel Design of Structures

Offshore Structural Engineering 1983

successfully estimate risk and reliability and produce innovative yet reliable designs using the approaches outlined in offshore structural engineering reliability and risk assessment a hands on guide for practicing professionals this book covers the reliability of offshore structures with an emphasis on the safety and reliability of offshore facilities during analysis design inspection and planning since risk assessment and reliability estimates are often based on probability the author utilizes concepts of probability and statistical analysis to address the risks and uncertainties involved in design he explains the concepts with clear illustrations and tutorials provides a chapter on probability theory and covers various stages of the process that include data collection analysis design and construction and commissioning in addition the author discusses advances in geometric structural forms for deep water oil exploration the rational treatment of uncertainties in structural engineering and the safety and serviceability of civil engineering and other offshore structures an invaluable guide to innovative and reliable structural design this book defines the structural reliability theory explains the reliability analysis of structures examines the reliability of offshore structures describes the probabilistic distribution for important loading variables includes methods of reliability analysis addresses risk assessment and more offshore structural engineering reliability and risk assessment provides an in depth analysis of risk analysis and assessment and highlights important aspects of offshore structural reliability the book serves as a practical reference to engineers and students involved in naval architecture ocean engineering civil structural and petroleum engineering

Applied Offshore Structural Engineering 1984-01-01

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 Structural Engineering *2017-12-19*

essentials of offshore structures framed and gravity platforms examines the engineering ideas and offshore drilling platforms for exploration and production this book offers a clear and acceptable demonstration of both the theory and application of the relevant procedures of structural fluid and geotechnical mechanics to offshore structures it

Applied Offshore Structural Engineering *1984*

a comprehensive overview of managing and assessing safety and functionality of ageing offshore structures and pipelines a significant proportion estimated at over 50 of the worldwide infrastructure of offshore structures and pipelines is in a life extension phase and is vulnerable to ageing processes this book captures the central elements of the management of ageing offshore structures and pipelines in the life extension phase the book gives an overview of the relevant ageing processes and hazards how ageing processes are managed through the life cycle including an overview of structural integrity management how an engineer should go about assessing a structure that is to be operated beyond its original design life and how ageing can be mitigated for safe and effective continued operation key features provides an understanding of ageing processes and how these can be mitigated applies engineering methods to ensure that existing structures can be operated longer rather than decommissioned unduly prematurely helps engineers performing these tasks in both evaluating the existing structures and maintaining ageing structures in a safe manner the book gives an updated summary of current practice and research on the topic of the management of ageing structures and pipelines in the life extension phase but also meets the needs of structural engineering students and practicing offshore and structural engineers in oil gas and engineering companies in addition it should be of value to regulators of the offshore industry

Offshore Structures *2019-11-06*

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

Essentials of Offshore Structures 2016-04-19

structural health monitoring shm deals with assessment evaluation and technical diagnosis of different structural systems of strategic importance extensive knowledge of shm shall lead to a clear understanding of risk and reliability assessment of structures which is currently mandatory for structures of strategic importance like bridges offshore structures etc this comprehensive compendium features explanations and salient illustrations of shm with applications to civil engineering structures in general and offshore structures in particular the book is unique with respect to its contents experimental case studies in lab scale and text presentation style a detailed subject matter of this nature

is currently scarce in the literature market the must have volume is a useful reference text for senior undergraduate and postgraduate students professionals academics and researchers in civil engineering ocean engineering mechanical engineering and structural engineering

Ageing and Life Extension of Offshore Structures 2019-02-04

the importance of accounting for nonlinear effects in offshore structures has increased due to their higher utilization and extended service lives this text addresses new methods for advanced analysis of offshore structures developed during the 1990s

Marine Structural Design *2015-09-18*

this book addresses applications of earthquake engineering for both offshore and land based structures it is self contained as a reference work and covers a wide range of topics including topics related to engineering seismology geotechnical earthquake engineering structural engineering as well as special contents dedicated to design philosophy determination of ground motions shock waves tsunamis earthquake damage seismic response of offshore and arctic structures spatial varied ground motions simplified and advanced seismic analysis methods sudden subsidence of offshore platforms tank liquid impacts during earthquakes seismic resistance of non structural elements and various types of mitigation measures etc the target readership includes professionals in offshore and civil engineering officials and regulators as well as researchers and students in this field

Structural Health Monitoring With Application To Offshore Structures *2019-04-24*

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

Nonlinear Analysis of Offshore Structures *2002*

while the existing literature on offshore structures touch on model testing a comprehensive text discussing the design construction instrumentation testing and analysis of the physical model is lacking this book fills that vacuum and provides through its survey of the theoretical and practical aspects of physical modeling an in depth coverage of the technology of model testing its usefulness runs through the entire field of engineering reaching far beyond its focus on offshore construction and its breadth of scope should appeal not only to engineers and naval architects but to scientists interested in structural or hydraulic testing as well contents introductionmodeling lawsmodel construction techniquesmodel testing facilitymodeling of environmentinstrumentation and signal controlmodeling of fixed offshore structuresmodeling of offshore operationsseakeeping testsdata analysis techniques readership undergraduates and engineers in coastal engineering naval architects scientists interested in structural or hydraulic testing keywords physical modeling scaling laws hydrodynamics testing facilities instruments offshore structures wave generation seakeeping a thorough and well written book could only have been written by someone with a wealth of personal experience the breadth of material in each chapter is truly impressive and valuable and the abundance of relevant references adds considerably to the value of the book these references will be especially beneficial to those wishing to pursue the individual topics in more detail it will serve as a valuable reference to anyone working in this field it is an important contribution to the field of offshore modelling coastal engineering

Modern Earthquake Engineering *2016-10-01*

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

Tubular Members in Offshore Structures 1985

the perfect guide for veteran structural engineers or for engineers just entering the field of offshore design and construction marine structural design calculations offers structural and geotechnical engineers a multitude of worked out marine structural construction and design calculations each calculation is discussed in a concise easy to understand manner that provides an authoritative guide for selecting the right formula and solving even the most difficult design calculation calculation methods for all areas of marine structural design and construction are presented and practical solutions are provided theories principles and practices are summarized the concentration focuses on formula selection and problem solving a quick look up guide marine structural design calculations includes both fps and si units and is divided into categories such as project management for marine structures marine structures loads and strength marine structure platform design and geotechnical data and pile design the calculations are based on industry code and standards like american society of civil engineers and american society of mechanical engineers as well as institutions like the american petroleum institute and the us coast guard case studies and worked examples are included throughout the book calculations are based on industry code and standards such as american society of civil engineers and american society of mechanical engineers complete chapter on modeling using sacs software and pdms software includes over 300 marine structural construction and design calculations worked out examples and case studies are provided throughout the book includes a number of checklists design schematics and data tables

Dynamic Analysis and Design of Offshore Structures *2017-10-12*

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

Offshore Structure Modeling *1994-02-21*

offshore engineering continues to develop and expand rapidly while in the public eye its focus has shifted towards subsea and floating developments in ever deeper waters bottom founded structures are still at the industry s heart the fixed structure remains its dependable workhorse and even today newly installed fixed structures far outnumber subsea and floating applications additionally the knowledge and

technology that have literally pushed the boundaries of offshore engineering into ever more demanding environments and water depths have been largely pioneered by bottom founded structures an engineer s central skill is to develop coherent and balanced models for the problems encountered regrettably due to availability of ever more sophisticated computer applications this expertise is at risk of getting lost and adopting computer outcomes without truly understanding the models and their limitations is naive risky and unprofessional therefore every engineer needs fundamental knowledge and understanding of underlying theories and technologies this handbook is intended to help offshore engineers acquire and sustain relevant expertise in some notoriously difficult subjects it attempts to stimulate reflection and critical evaluation of the models used and the strengths and weaknesses of the solutions found while dealing more specifically with bottom founded structures the material is generally applicable to offshore structures of all types the handbook can be used as a textbook for master s students and as a manual and reference guide for practising professionals

Offshore Semi-Submersible Platform Engineering *2020-12-22*

this book provides detailed analysis methods and design guidelines for fire resistance a vital consideration for offshore processing and production platforms recent advancements in the selection of various geometric structural forms for deep water oil exploration and production require a detailed understanding of the design of offshore structures under special loads focusing on a relatively new aspect of offshore engineering the book offers essential teaching material illustrating and explaining the concepts discussed through many tutorials it creates a basis for designing new courses for students of ocean engineering and naval architecture civil engineering and applied mechanics at both undergraduate and graduate levels as such its content can be used for self study or as a text in structured courses and professional development programs

Marine Structural Design Calculations *2014-09-30*

marine structures engineering is designed to help engineers meet the growing worldwide demand for construction of new ports and the modernization of existing ports and terminals it provides an authoritative guide to the design construction rehabilitation repair and maintenance of port and harbor structures each chapter is self contained allowing readers to access specific information the author draws on his extensive experience in offshore structure and port engineering to demonstrate evaluation rehabilitation repair and maintenance of in service marine structures also covered in detail are state of the art approaches to marine structures in cold regions with special attention to the role of ice loads permafrost and other ice effects shiplifts marine railways shipways and dry docks offshore moorings floating breakwaters marinas structures that protect bridge piers from ship impact offering practical information on all aspects of marine structures this book serves as an indispensable resource to all engineers and professionals involved in design construction maintenance and modernization of ports and harbors

Mooring System Engineering for Offshore Structures *2019-06-04*

papers presented at the fourth international symposium on integrity of offshore structures 2 3 july 1990 kelvin conference centre university of glasgow scotland organized by the department of naval architecture and ocean engineering and mechanical engineering

Handbook of Bottom Founded Offshore Structures *2013-12-01*

the offshore industry continues to drive the oil and gas market into deeper drilling depths more advanced subsea systems and cross into multiple disciplines to further technology and equipment engineers and managers have learned that in order to keep up with the evolving market they must have an all inclusive solution reference subsea engineering handbook second edition remains the go to source for everything related to offshore oil and gas engineering enhanced with new information spanning control systems equipment qra electric tree structures and manifold designs this reference is still the one product engineers rely on to understand all components of subsea technology packed with new chapters on subsea processing and boosting equipment as well as coverage on newer valves and actuators this handbook explains subsea challenges and discussions in a well organized manner for both new and veteran engineers to utilize throughout their careers subsea engineering handbook second edition remains the critical road map to understand all subsea equipment and technology gain access to the entire spectrum of subsea engineering including the very latest on equipment safety and flow assurance systems sharpen your knowledge with new content coverage on subsea valves and actuators multiphase flow loop design tree and manifold design as well as subsea control practice and learn with new real world test examples and case studies

Design Aids of Offshore Structures Under Special Environmental Loads including Fire Resistance *2018-01-12*

a textbook for upper division or graduate students of ocean or naval engineering presenting the main subject areas that contribute to the design construction installation and operation of fixed and floating offshore structures with emphasis on the fundamentals of oceanography basic fluid mechanics wave theory hydrodynamics naval architecture and structural analysis annotation copyrighted by book news inc portland or

Marine Structures Engineering: Specialized Applications *2012-12-06*

due in part to a growing demand for offshore oil and gas exploration the development of marine structures that initially started onshore is now moving into deeper offshore areas designers are discovering a need to revisit basic concepts as they anticipate the response behavior of marine structures to increased water depths providing a sim

Structural Health Monitoring with Application to Offshore Structures *2019*

civil engineers must assure that buildings have long and durable lives and therefore structural assessment and repair are routinely required and must be performed with the utmost accuracy and professionalism assessment evaluation and repair of concrete steel and offshore structures presents the typical causes of structural failure and their mechanisms discusses the most up to date methods for evaluation and structural assessment and explains the best project management strategies from the feasibility stage through operations and maintenance numerous types of structures are examined and are further illustrated by relevant case studies features examines the probability of several types of structural failure and includes reliability analysis presents best practices for predicting the structural lifetime for both onshore and offshore structures and reviews the most advanced methods for repair includes numerous practical case studies of structural failure and offers mitigation strategies depending of type of structure

Integrity of Offshore Structures 2022-01-27

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

Subsea Engineering Handbook *2018-11-15*

dynamics of fixed marine structures third edition proves guidance on the dynamic design of fixed structures subject to wave and current action the text is an update of the ur8 design guide dynamics of marine structures with discussion of foundations wind turbulence offshore installations earthquakes and strength and fatigue the book employs analytical methods of static and dynamic structural analysis techniques particularly the statistical and spectral methods when applied to loading and in the calculating dynamic responses the statistical methods are

explained when used to wave wind and earthquake calculations together with the problems encountered in actual applications of importance to fixed offshore platforms are the soil properties and foundation covering soil behavior site investigation testing seabed stability gravity structures and the use of single piles methods of forecasting measuring and modeling of waves and currents are also presented in offshore structure construction basic hydrodynamics is explained in understanding wave theory and some description is given to forecasting of environmental conditions that will affect the structures the effects of vortex induced vibrations on the structure are explained and the three methods that can prevent vortex induced oscillations are given wind turbulence or wind loads are analyzed against short natural period or long natural periods of structures the transportation of offshore platforms installation and pile driving including examples of the applications found in the book are given as well the guide is helpful for offshore engineers designers of inshore jetties clients needing design and analysis work specialists related to offshore structural engineering and students in offshore engineering

Dynamics of Offshore Structures *1989*

unique cutting edge material on structural dynamics and natural forces for offshore structures using the latest advances in theory and practice dynamics of offshore structures second edition is extensively revised to cover all aspects of the physical forces structural modeling and mathematical methods necessary to effectively analyze the dynamic behavior of offshore structures both closed form solutions and the mathematica r software package are used in many of the up to date example problems to compute the deterministic and stochastic structural responses for such offshore structures as buoys moored ships and fixed bottom cable stayed and gravity type platforms throughout the book consideration is given to the many assumptions involved in formulating a structural model and to the natural forces encountered in the offshore environment these analyses focus on plane motions of elastic structures with linear and nonlinear restraints as well as motions induced by the forces of currents winds earthquakes and waves including the latest theories and information on wave mechanics topics addressed include multidegree of freedom linear structures continuous system analysis including the motion of cables and pipelines submerged pile design structural modal damping fluid structure soil interactions and single degree of freedom structural models that together with plane wave loading theories lead to deterministic or time history predictions of structural responses these analyses are extended to statistical descriptions of both wave loading and structural motion dynamics of offshore structures second edition is a valuable text for students in civil and mechanical engineering programs and an indispensable resource for structural geotechnical and construction engineers working with offshore projects

Advanced Marine Structures 2015-08-18

offshore projects and engineering management delivers a critical training tool for engineers on how to prepare cost estimates and understand the most recent management methods specific to the oil and gas offshore industry the reference dives into project economics interface management and contracts methods for analyzing risk activity calculations and risk response strategies are covered for offshore fpso and pipelines supported with case studies detailed discussions and practical applications this comprehensive book gives oil and gas managers a management toolbox to extend asset life reduce costs and minimalize impact to personnel and environment oil and gas assets are under constant pressure and engineers and managers need engineering management training and strategies to ensure their operations

are safe and cost effective this book helps manage the ramp up to the management of offshore structures discusses engineering management for new and existing offshore platforms including fpsos and subsea pipelines presents everything a reader needs to understand the most recent pmp modules and management methods provides the best tools tactics and forms through several practical case studies

Assessment, Evaluation, and Repair of Concrete, Steel, and Offshore Structures 2018-10-01

practical engineering management of offshore oil and gas platforms delivers the first must have content to the multiple engineering managers and clients devoted to the design equipment and operations of offshore oil and gas platforms concepts explaining how to interact with the various task forces getting through bid proposals and how to maintain project control are all covered in the necessary training reference relevant equipment and rule of thumb techniques to calculate critical features on the design of the platform are also covered including tank capacities and motor power along with how to consistently change water oil and gas production profiles over the course of a project the book helps offshore oil and gas operators and engineers gain practical understanding of the multiple disciplines involved in offshore oil and gas projects using experience based approaches and lessons learned delivers the first ever must have content to the multiple engineering managers and clients devoted to the design equipment and operations of offshore oil and gas platforms contains rules of thumb techniques to calculate critical features on the design of the platform includes practical checklists for project estimates and cost evaluation for effective project execution in budgeting and scheduling helps offshore oil and gas operators and engineers gain practical understanding of the multiple disciplines involved in offshore oil and gas projects using experience based approaches and lessons learned

Offshore Mechanics *2018-05-07*

oil and gas assets are under constant pressure and engineers and managers need integrity management training and strategies to ensure their operations are safe gaining practical guidance is not trained ahead of time and learned on the job asset integrity management of offshore and onshore structures delivers a critical training tool for engineers to prepare and mitigate safety risk starting with a transitional introductory chapter the reference dives into integrity management approaches including codes and standards inspection assessment and repair methods are covered for offshore fpso onshore and pipelines suggested proactive approaches and modeling risk based inspection are also included supported with case studies detailed discussions and practical applications asset integrity management of offshore and onshore structures gives oil and gas managers a reference to extend asset life reduce costs and minimalize impact to personnel and environment bridge between the theory of integrity management into oil and gas application understand the strategies and techniques to mitigate corrosion affect assessment inspection and repairs from real world examples manage a variety of assets including offshore subsea pipelines and onshore

Safety Levels Implied in Offshore Structural Design Codes *1988*

offshore platforms face many risks including a hostile ocean environment extreme temperatures overpressure loads fire risks and hydrocarbon explosions all of which pose unique challenges in designing their topside platforms the topside design also involves the selection of appropriate materials to reduce fire risk without compromising the functional requirements these platforms serve valuable utility production and processing purposes and can also provide living quarters for personnel concepts such as basic design special design materials selection and risk hazards are explained in the authors straightforward classroom style and are based on their rich experience in both academia and industry features includes practical examples which are solved using international codes to offer a better understanding of the subjects presented addresses safety and risk of offshore platforms and considers numerous topside accident scenarios discusses the structural and mechanical properties of various materials such as steel and newer functionally graded materials fgms design aids for offshore topside platforms under special loads serves as a design manual for multi disciplinary engineering graduates and practicing professionals working in civil mechanical offshore naval and petroleum engineering fields in addition the book will serve as reference manual for practicing design engineers and risk assessors

Dynamics of Fixed Marine Structures *2013-10-22*

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

Dynamics of Offshore Structures *2003-01-03*

in the early 1970s new technology was needed to aid in coal oil and gas exploration in the high arctic in order to see if ice sheets could provide a perfect structural support for roadways airstrips and drilling platforms housing hundreds of workers however little engineering experience was available in this regard this book uniquely relates the human history and the technical innovations developed in this harsh environment through research testing and applying many existing engineering principles to ice structure analysis it offers essential insights into the history of ice engineering for designers university educators and postgraduate students while other studies detail research and testing in the laboratory this text relates the testing development construction and use of ice in real construction conditions

Tubular Members in Offshore Structures *1986-05-01*

stochastic analysis of offshore steel structures provides a clear and detailed guide to advanced analysis methods of fixed offshore steel structures using 3d beam finite elements under random wave and earthquake loadings advanced and up to date research results are coupled with modern analysis methods and essential theoretical information to consider optimal solutions to structural issues as these methods require and use knowledge of different subject matters a general introduction to the key areas is provided this is followed by in depth explanations supported by design examples relevant calculations and supplementary material containing related computer programmers by combining this theoretical and practical approach stochastic analysis of offshore steel structures cover a range of key concepts in detail including the basic principles of standard 3d beam finite elements and special connections wave loading from hydrodynamics to the calculation of wave loading on structural members stochastic response calculations with corresponding solution algorithms including earthquakes and fatigue damage reliability calculation and reliability based design optimization the broad and detailed coverage makes this a solid reference for research oriented studies and practical sophisticated design methods students researchers insuring bodies and practical designer offices can turn to stochastic analysis of offshore steel structures to broaden their theoretical understanding and develop their practical designs and applications of 3d finite analysis in fixed offshore steel structures

Offshore Projects and Engineering Management *2021-06-18*

this book addresses the concepts of material selection and analysis choice of structural form construction methods environmental loads health monitoring non destructive testing and repair methodologies and rehabilitation of ocean structures it examines various types of ocean and offshore structures including drilling platforms processing platforms and vessels towers sea walls and surge barriers and more it also explores the use of mems in offshore structures with regard to military and oil exploration applications full color figures as well as numerous solved problems and examples are included to help readers understand the applied concepts

Practical Engineering Management of Offshore Oil and Gas Platforms *2016-05-06*

advanced steel design of structures examines the design principles of steel members under special loads and covers special geometric forms and conditions not typically presented in standard design books it explains advanced concepts in a simple manner using numerous illustrative examples and matlab codes features provides analysis of members under unsymmetrical bending includes coverage of structures with special geometry and their use in offshore applications for ultra deep water oil and gas exploration presents numerical modeling and analysis of steel members under fire conditions impact and blast loads includes matlab examples that will aid in the capacity building of civil engineering students approaching this complex subject written for a broad audience the presentation of design concepts of steel members will be suitable for upper level undergraduate students the advanced design theories for offshore structures under special loads will be an attractive feature for post graduate students and researchers practicing engineers will also find the book useful as it includes numerous solved examples and practical tutorials

Asset Integrity Management for Offshore and Onshore Structures 2022-05-11

Design Aids for Offshore Topside Platforms Under Special Loads *2021-11-29*

Offshore Structures *2012-01-24*

The Story of Offshore Arctic Engineering *2018-10-29*

Stochastic Analysis of Offshore Steel Structures *2012-08-01*

Ocean Structures 2017-01-06

Advanced Steel Design of Structures *2019-11-01*

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