

Ship Structural Design Concepts Second C Geheimore

The follow-up to the 2000 Golden Pen Award-winning Structural Design for the Stage, this second edition provides the theater technician with a foundation in structural design, allowing an intuitive understanding of "why sets stand up." It introduces the basics of statics and the study of the strength of materials as they apply to typical scenery, emphasizing conservative approaches to real world examples. This is an invaluable reference for any serious theatre technician throughout their career, from the initial study of the fundamental concepts, to the day-to-day use of the techniques and reference materials. Now in hardcover, with nearly 200 new pages of content, it has been completely revised and updated to reflect the latest recommended practices of the lumber and steel industries, while also including aluminum design for the first time.

Covering the broad field of marine and offshore technology, sections of the volume address ocean environments, offshore structures, naval architecture, submersibles and diving, marine risers and pipelines, marine engineering, marine control systems, mooring and dynamic positioning, marine salvage, corrosion, marine safety, electronic navigations and radar, and maritime law. Annotation copyrighted by Book News, Inc., Portland, OR

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

Advanced Ship Design for Pollution Prevention is a collection of papers reflecting the teaching materials for a Master of Naval Architecture course developed in the European ASDEPP (Advanced Ship Design for Pollution Prevention) project. The project was financed by the European Commission within the TEMPUS program. The topics covered in the book include Ship Structural Design Concepts, Second Cycle Cornell Maritime Pr/Tidewater Pub Proceedings of the Marine Safety Council Marine Structural Design Butterworth-Heinemann

Topics in Modal Analysis II, Volume 6: Proceedings of the 30th IMAC, A Conference and Exposition on Structural Dynamics, 2012, is the sixth volume of six from the Conference and brings together 65 contributions to this important area of research and engineering. The collection presents early findings and case studies on fundamental and applied aspects of Structural Dynamics, including papers on: Aerospace, Acoustics, Energy Harvesting, Shock and Vibration, Finite Element, Structural Health Monitoring, Biodynamics Experimental Techniques, Damage Detection, Rotating Machinery, Sports Equipment Dynamics, Aircraft/Aerospace. This new reference describes the applications of modern structural engineering to marine structures. It will provide an invaluable resource to practicing marine and offshore engineers working in oil and gas as well as those studying marine structural design. The coverage of fatigue and fracture criteria forms a basis for limit-state design and re-assessment of existing structures and assists with determining material and inspection requirements. Describing applications of risk assessment to marine and offshore industries, this is a practical and useful book to help engineers conduct structural design. *Presents modern structural design principles helping the engineer understand how to conduct structural design by analysis *Offers practical and usable theory for industrial applications of structural reliability theory

Safety and Reliability of Industrial Products, Systems and Structures deals with risk assessment, which is a fundamental support for decisions related to the design, construction, operation and maintenance of industrial products, systems and infrastructures. Risks are influenced by design decisions, by the process of construction of systems and inf

In recent years significant advances have been made in the development of methods and modeling procedures for structural assessment of marine structures. Various assessment methods are incorporated in the methods used to analyze and design efficient ship structures, as well as in the methods of structural reliability to be used to ensure the safety

A new edition of Francis D.K. Ching's illustrated guide to structural design Structures are an essential element of the building process, yet one of the most difficult concepts for architects to grasp. While structural engineers do the detailed consulting work for a project, architects should have enough knowledge of structural theory and analysis to design a building. Building Structures Illustrated takes a new approach to structural design, showing how structural systems of a building—such as an integrated assembly of elements with pattern, proportions, and scale—are related to the fundamental aspects of architectural design. The book features a one-stop guide to structural design in practice, a thorough treatment of structural design as part of the entire building process, and an overview of the historical development of architectural materials and structure. Illustrated throughout with Ching's signature line drawings, this new Second Edition is an ideal guide to structures for designers, builders, and students. Updated to include new information on building code compliance, additional learning resources, and a new glossary of terms Offers thorough coverage of formal and spatial composition, program fit, coordination with other building systems, code compliance, and much more Beautifully illustrated by the renowned Francis D.K. Ching Building Structures Illustrated, Second Edition is the ideal resource for students and professionals who want to make informed decisions on architectural design.

The passage of the Oil Pollution Act of 1990 (OPA 90) by Congress and subsequent modifications of international maritime regulations resulted in a far-reaching change in the design of tank vessels. Double-hull rather than single-hull tankers are now the industry standard, and nearly all ships in the world maritime oil transportation fleet are expected to have double hulls by about 2020. This book assesses the impact of the double hull and related provisions of OPA 90 on ship safety, protection of the marine environment, and the economic viability and operational makeup of the maritime oil transportation industry. The influence of international conventions on tank vessel design and operation is addressed. Owners and operators of domestic and international tank vessel fleets, shipyard operators, marine architects, classification

societies, environmentalists, and state and federal regulators will find this book useful.

Steel plated structures are important in a variety of marine and land-based applications, including ships, offshore platforms, power and chemical plants, box girder bridges and box girder cranes. The basic strength members in steel plated structures include support members (such as stiffeners and plate girders), plates, stiffened panels/grillages and box girders. During their lifetime, the structures constructed using these members are subjected to various types of loading which is for the most part operational, but may in some cases be extreme or even accidental. Ultimate Limit State Design of Steel Plated Structures reviews and describes both fundamentals and practical design procedures in this field. The derivation of the basic mathematical expressions is presented together with a thorough discussion of the assumptions and the validity of the underlying expressions and solution methods. Particularly valuable coverage in the book includes: * Serviceability and the ultimate limit state design of steel structural systems and their components * The progressive collapse and the design of damage tolerant structures in the context of marine accidents * Age related structural degradation such as corrosion and fatigue cracks Furthermore, this book is also an easily accessed design tool which facilitates learning by applying the concepts of the limit states for practice using a set of computer programs which can be downloaded. In addition, expert guidance on mechanical model test results as well as nonlinear finite element solutions, sophisticated design methodologies useful for practitioners in industries or research institutions, selected methods for accurate and efficient analyses of nonlinear behavior of steel plated structures both up to and after the ultimate strength is reached, is provided. Designed as both a textbook and a handy reference, the book is well suited to teachers and university students who are approaching the limit state design technology of steel plated structures for the first time. The book also meets the needs of structural designers or researchers who are involved in civil, marine and mechanical engineering as well as offshore engineering and naval architecture.

Forest trees cover 30% of the earth's land surface, providing renewable fuel, wood, timber, shelter, fruits, leaves, bark, roots, and are source of medicinal products in addition to benefits such as carbon sequestration, water shed protection, and habitat for 1/3 of terrestrial species. However, the genetic analysis and breeding of trees has lagged behind that of crop plants. Therefore, systematic conservation, sustainable improvement and pragmatic utilization of trees are global priorities. This book provides comprehensive and up to date information about tree characterization, biological understanding, and improvement through biotechnological and molecular tools.

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.

This proceedings volume for the 4th international conference CIGOS 2017 (Congrès International de Géotechnique - Ouvrages - Structures) presents novel technologies, solutions and research advances, making it an excellent guide in civil engineering for researchers, students, and professional engineers alike. Since 2010, CIGOS has become a vital forum for international scientific exchange on civil engineering. It aims to promote beneficial economic partnerships and technology exchanges between enterprises, worldwide institutions and universities. Following the success of the last three CIGOS conferences (2010, 2013 and 2015), the 4th conference was held at Ho Chi Minh City University of Technology, Ho Chi Minh City (Saigon), Vietnam on 26 to 27 October 2017. The main scientific themes of CIGOS 2017 were focused on 'New Challenges in Civil Engineering'.

Risk-based ship design is a new scientific and engineering field of growing interest to researchers, engineers and professionals from various disciplines related to ship design, construction, operation and regulation. The main motivation to use risk-based approaches is twofold: implement a novel ship design which is considered safe but - for some formal, regulatory reason - cannot be approved today and/or rationally optimize an existing design with respect to safety, without compromising on efficiency and performance. It is a clear direction that all future technological and regulatory (International Maritime Organisation) developments regarding ship design and operation will go through risk-based procedures, which are known and well established in other industries (e.g. nuclear, aviation). The present book derives from the knowledge gained in the course of the project SAFEDOR (Design, Operation and Regulation for Safety), an Integrated Project under the 6th framework programme of the European Commission (IP 516278). The book aims to provide an understanding of the fundamentals and details of the integration of risk-based approaches into the ship design process. The book facilitates the transfer of knowledge from recent research work to the wider maritime community and advances scientific approaches dealing with risk-based design and ship safety.

The first edition of this book was quickly acclaimed as the new leading text worldwide on the law and practice of pollution from ships. The second edition deals with a variety of developments since then in this fast-moving subject: the Erika and the Prestige; changes in international law on maritime safety and compensation; latest decisions on claims for compensation; analysis of the SCOPIC regime; new material on ports of refuge, transboundary movements, and pollution from offshore craft; latest cases and regulatory changes in the US; and enlarged chapters on enforcement of laws and criminal sanctions. Like its predecessor, the second edition is superbly indexed and written clearly with the needs in mind of a wide international readership.

This important, self-contained reference deals with structural life assessment (SLA) and structural health monitoring (SHM) in a combined form. SLA periodically evaluates the state and condition of a structural system and provides recommendations for possible maintenance actions or the end of structural service life. It is a diversified field and relies on the theories of fracture mechanics, fatigue damage process, and reliability theory. For common structures, their life assessment is not only governed by the theory of fracture mechanics and fatigue damage process, but by other factors such as corrosion, grounding, and sudden collision. On the other hand, SHM deals with the detection, prediction, and location of crack development online. Both SLA and SHM are combined in a unified and coherent treatment, bringing together the major mechanical processes at work that determine the lifetime of a structure, including normal loading, extreme loading, and the effects of corrosion with relevant analysis techniques covering joints and weldments, which are features where structural failure is likely to originate reviewing diversified problems including probabilistic description of structural failure, extreme loading, environmental effects such as corrosion and hydrogen embrittlement, joints and weldments, and control of crack propagation (crack arresters) and corrosion providing a unified approach to SLA and SHM. Handbook of Structural Life Assessment will be an essential guide for aerospace structures designers and maintenance engineers, pipeline engineers, ship designers and builders, researchers in civil, mechanical, naval, and aerospace engineering, and graduate students in civil, mechanical, naval, and aerospace engineering.

Developments in Renewable Energies Offshore contains the papers presented at the 4th International Conference on Renewable Energies Offshore (RENEW 2020, Lisbon, Portugal, 12 - 15 October 2020). The book covers a wide range of topics, including: resource assessment; wind energy; wave energy; tidal energy; ocean energy devices; multiuse platforms; PTO design; grid connection; economic assessment; materials and structural design; installation planning and maintenance planning. The book will be invaluable to professionals and academics involved or interested in Offshore Engineering, and Renewable and Wind Energy.

Reviews and describes both the fundamental and practical design procedures for the ultimate limit state design of ductile steel plated

