Marine Engineering Thermodynamics

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Thermodynamics of Marine Engineering Systems Bloomsbury Publishing
This book covers the principal topics in applied mechanics for professional trainees studying Merchant Navy Marine Engineering Certificates of Competency (CoC) as well as the core syllabi in applied mechanics for undergraduates studying for BSc, BEng and MEng degrees in marine engineering, naval architecture and other marine technology related programmes. This new edition has been fully updated to reflect the recent changes to the Merchant Navy syllabus and current pathways to a sea-going engineering career, specifically the increased emphasis that has been placed on colleges and universities now responsible for the academic requirements for those studying for a career in marine engineering. In particular this means the book has been updated to include more information about the general principles and applications of the exercises in the practical world of marine engineering. Each chapter has fully worked examples interwoven into the text, with test examples set at the end of each chapter. Other revisions include examples reflecting modern machines and practice, current legislation and current syllabi.

Diesel Engine Engineering 2 **Butterworth-Heinemann**
Introduction to Marine Engineering explains the operation of all the ship's machinery, with emphasis on correct, safe operating procedures and practices at all times. Organized into 17 chapters, this book begins with an overall look at the ship. Subsequent chapters describe the various ship machineries, including diesel engines, steam turbines, boilers, feed systems, pumps, auxiliaries, deck machinery, hull equipment, shafting, propellers, steering gear, and electrical equipment. Other aspects of marine engineering, particularly, fuel oils, lubricating oils, refrigeration, air conditioning, ventilation, firefighting and safety, watchkeeping, and equipment operation, are also described. This book will be useful to anyone with an interest in ships' machinery or a professional involvement in the shipping business.

Reeds Vol 3: Applied Thermodynamics for Marine Engineers Bloomsbury Publishing
Turbine Main Engines deals with the principle of operation of turbine main engines. Topics covered include practical considerations that affect turbine design and efficiency; steam turbine rotors, blades, nozzles, and diaphragms; lubricating oil systems; and gas turbines for use with nuclear reactors. Gas turbines for naval boost propulsion, merchant ship propulsion, and naval main propulsion are also considered. This book is divided into three parts and begins with an overview of the basic mode of operation of the steam turbine engine and how it converts the pressure energy of the ingoing steam into equivalent kinetic energy. The second part deals with the principle of operation of marine gas turbines and discusses the effect of pressure and temperature on turbine performance; creep of turbine components; fouling of compressors and turbines; and control systems and protective devices. The final part describes free piston-gas turbine machinery and looks at different types of free piston engine, together with turbine fouling and washing procedure. This monograph will be of interest to mechanical engineers and those involved in turbine operation and design.

Marine Engineering Certification Upgrading Program Jones & Bartlett Learning
This textbook covers the theoretical, fundamental aspects of naval architecture for students preparing for the Class 2 and Class 1 Marine Engineer Officer exams. It introduces the basic foundation themes within naval architecture, (hydrostatics, stability, resistance and powering), using worked examples to show how solutions should be presented for an exam. The topics are ordered in a manner of a typical taught module, to aid the use of the book by lecturers as a compliment to a course. Importantly, this updated edition contains updated text and figures in line with modern practice, including an update of many of the figures to three-dimensional diagrams, and a new section on computer software for naval architecture. The book also includes sample examination questions with worked examples answers to aid students in their learning.

Turbine Main Engines PHI Learning Pvt. Ltd.
Volume II of the manual that has been absolutely indispensable to the ship's engineer for over forty years was completely updated by a team of practicing marine engineers in 1991. Chapters on obsolete equipment were deleted; those on systems that are still current were updated; and new chapters were written to cover the innovations in materials, machines, and operating practices that evolved recently.

Robust Control of Diesel Ship Propulsion Bloomsbury Publishing
This authoritative textbook will cover the principal topics in thermodynamics for officer cadets studying Merchant Navy Marine Engineering Certificates of Competency (CoC) as well as the core syllabi in thermodynamics for undergraduate students in marine engineering, naval architecture and other marine technology related programmes. It will cover the laws of thermodynamics and of perfect gases, their principles and application in a marine environment. This new edition will be fully updated to reflect the recent changes to the Merchant Navy syllabus and current pathways to a sea-going engineering career, including National Diplomas, Higher National Diploma and degree courses. This new content will focus on how the the formulae and calculations apply to the actual workplace, and these updates will open up the potential market in the UK as well as appealing to more of the international market. Each chapter has fully worked examples interwoven into the text, with test

examples at the end of each chapter. Other revisions include new material on combined steam and motor propulsion systems, expanded sections on different IC engine cycles, information on the modern use of steam and gas turbines for the production of electrical power, and more.

Reeds Vol 5: Ship Construction for Marine Engineers Bloomsbury Publishing

I developed these Review Notes in 2007 as a refresher for students returning to college as graduate students in the U.S. Merchant Marine Academy's Master of Marine Engineering program. They were inspired by my professors at MIT who, at the opening of each graduate thermal power systems course, took the time to review the thermodynamic laws and relationships applicable to the course of study. These notes are now part of my syllabus for the undergraduate Internal Combustion Engine and Gas Turbine courses that I teach at the Academy. This material is for students to use as a refresher and reference guide. These notes were enhanced and expanded in this 2017 second edition.

MECHANICAL SCIENCES Reeds Vol 3: Applied Thermodynamics for Marine Engineers

Within the marine and offshore industry, there is a clear and growing need for increased training and education on the use of electrical power systems. The number of electrical plant and appliances now in service has grown at an alarming rate in recent years, as has the amount of electrical power generated and utilised on board. Large passenger ships now carry as many electrical officers as marine engineers, and electrical propulsion is now in common use by LNG carriers, small parcel tankers, oil tankers, ferries, offshore support, the navy, fleet auxiliary, cable layers and cruise ships. A number of shipping companies now award the Chief Electro Technical Officer the equivalent rank to the ship's master and Chief Engineer. These developments have resulted in the establishment of a Foundation Degree programme for Electro Technical Officers and the current development of full degree programmes. As such, a targeted textbook for students on the subject is required. As with all titles in the Reeds Marine Engineering Series, this book will be written in clear, accessible language, so as to be of use to all students and particularly those for whom English isn't their first language. Technical drawings and diagrams will be used throughout and each chapter will be accompanied by example examination questions.

Marine Auxiliary Machinery Bloomsbury Publishing

Covering the syllabuses in Applied Heat for all classes of the Marine Engineers' Certificates of Competency of the Department of Transport (DTp), this book should be a useful aid to students on BTEC and SCOTVEC engineering courses. Basic principles are dealt with, commencing at a fairly elementary stage. Each chapter has fully worked examples woven into the text, test examples are set at the end of each chapter, and some typical exam questions are included.

A Computer Approach (SI Units Version) Springer Science & Business Media

Primarily intended for the first-year undergraduate students of various engineering disciplines, this comprehensive and up-to-date text also serves the needs of second-year undergraduate students (Mechanical, Civil, Aeronautical, Chemical, Production and Marine Engineering) studying Engineering Thermodynamics and Fluid Mechanics. The whole text is divided into two parts and gives a detailed description of the theory along with the systematic applications of laws of Thermodynamics and Fluid Mechanics to engineering problems. Part I (Chapters 1-6) deals with the energy interaction between system and surroundings, while Part II (Chapters 7-15) covers the fluid flow phenomena. This accessible and comprehensive text is designed to take the student from an elementary level to a level of sophistication required for the analysis of practical problems.

ENGINEERING THERMODYNAMICS AND FLUID MECHANICS New Age International

Reeds Vol 3: Applied Thermodynamics for Marine EngineersBloomsbury Publishing

Electronic Thermodynamics Cornell Maritime Press/Tidewater Publishers

The 4th Edition of Cengel & Boles Thermodynamics:An Engineering Approach takes thermodynamics education to the next level through its intuitive and innovative approach. A long-time favorite among students and instructors alike because of its highly engaging, student-oriented conversational writing style, this book is now the to most widely adopted thermodynamics text in theU.S. and in the world.

Reeds Vol 12 Motor Engineering Knowledge for Marine Engineers Bloomsbury Publishing

Marine Auxiliary Machine: Sixth Edition explains the correct operation and maintenance of marine auxiliary machinery. The book discusses topics such as the arrangements of the engine and boiler room; pipes and fittings and pumps; compressors and separators; and heat exchangers - its types, control of temperature, and maintenance. The book also talks about other machineries such as diesel engines, steam turbines, propellers, and gears; refrigeration and air conditioning systems; deck machinery; and safety equipment. The text is recommended for engineers in ships who would like to know more about the auxiliary machines onboard ships, how they are operated, and the principles behind them.

Reeds Vol 13: Ship Stability, Powering and Resistance A&C Black

This is a fully revised, new edition on the topic of instrumentation and control systems and their application to marine engineering for professional trainees studying Merchant Navy Marine Engineering Certificates of Competency (CoC) as well as Electrical/Marine Engineering undergraduate students. Providing generic technical and practical descriptions of the operation of instrumentation and control devices and systems, this volume also contains mathematic analysis where appropriate. Addressing this subject area, the domain of Instrumentation Engineers/Technicians as well as Control Engineers, and covering established processes and protocols and extensive developing technology, this textbook is written with the marine engineer in mind, particularly those studying Engineering Knowledge. The content ranges from simple measurement devices, through signal conditioning and digitisation to highly sophisticated automated control and instrumentation systems. It also includes a brand new section on electrical equipment in hazardous areas detailing hazards, gas groups, temperature classifications and types of protection including increased and intrinsic safety and encapsulation, and up-to-date material on the new generation of Liquified Natural Gas carriers, SMART sensors and protocols, as well as computer based systems.

Modern Marine Engineer's Manual CRC Press

This authoritative textbook will cover the principal topics in thermodynamics for officer cadets studying Merchant Navy Marine Engineering Certificates of Competency (CoC) as well as the core syllabi in thermodynamics for undergraduate students in marine engineering, naval architecture and other marine

technology related programmes. It will cover the laws of thermodynamics and of perfect gases, their principles and application in a marine environment. This new edition will be fully updated to reflect the recent changes to the Merchant Navy syllabus and current pathways to a sea-going engineering career, including National Diplomas, Higher National Diploma and degree courses. This new content will focus on how the the formulae and calculations apply to the actual workplace, and these updates will open up the potential market in the UK as well as appealing to more of the international market. Each chapter has fully worked examples interwoven into the text, with test examples at the end of each chapter. Other revisions include new material on combined steam and motor propulsion systems, expanded sections on different IC engine cycles, information on the modern use of steam and gas turbines for the production of electrical power, and more.

The Commonwealth and International Library: Marine Engineering Division A&C Black

Here is a comprehensive and comprehensible treatment of engineering thermodynamics from its theoretical foundations to its applications in real situations. The thermodynamics presented will prepare students for later courses in fluid mechanics and heat transfer, and practicing engineers will find the applications helpful in their professional work. The book is appropriate for an introductory undergraduate course in thermodynamics and for a subsequent course in thermodynamic applications.The chapters dealing with steam power plants, internal combusion engines, and HVAC are unmatched. The introductory chapter on turbomachinery is also unique. A thorough development of the second law of thermodynamics is provided in chapters 7-9. The ramifications of the second law receive thorough discussion; the student not only performs calculations, but understands the implications of the calculated results.Computer models created in TK Solver accompany each chapter and are particularly useful in the application areas. The TK Solver files provided with the book can be used as written or modified and merged into models developed to analyze new problems.The book has two particularly important strengths: its readability and the depth of its treatment of applications. The readability will make the content understandable to the average students; the depth in applications will make the book suitable for applied upper-level courses as well.

Thermodynamics, Combustion and Heat Engineering A&C Black

First book to give an insight into a growing area of interest - stealth warship technology - which is crucial for future developments in warship construction. It demonstrates the importance of materials used in warship construction and how this influences all of a naval platform's design parameters. Stealth technology is now considered a critical component within warship design, with interest in the concept of stealth increasing around the globe as naval forces adapt to new challenges. Many new developing nations are now implementing their first generation of stealth technology military hardware. This exciting book explores the full extent of threats to warships and thus the transformational change in naval architecture to incorporate these modern stealth technologies. Discussing the history of stealth technology, with references to well-known aircraft, ships and events in military history, the book also provides readers with a unique opportunity to develop an understanding of the specialist skills required in this naval sector. This is an essential read for anyone interested in stealth design and the issues involved in this evolving technology.

Elsevier

This exciting new edition covers the core subject areas of arithmetic, algebra, mensuration in 2D and 3D, trigonometry and geometry, graphs, calculus and statistics and probability for Marine Engineering students. Initial examples have been designed purely to practise mathematical technique and, once these skills have been mastered, further examples focus on engineering situations where the appropriate skills may be utilised. The practical questions are primarily from a marine engineering background but questions from other disciplines, such as electrical engineering, will also be covered, and reference made to the use of advanced calculators where relevant.

Elements of Environmental Engineering Thomas Reed Publications

This is a text for training students of electronic engineering in thermodynamical laws and heat transfer principles crucial to modern electronic design. The work is complete both for engineering thermodynamics, including chemical thermodynamics, and for heat transfer analysis. The book discloses, for the first time, several important discoveries made by Dr. Talbott, including equations for finding the radius of the hydrogen atom by classical methods, and a new wave model.

Reeds Vol 14: Stealth Warship Technology Bloomsbury Publishing

Revised and extended, this new edition provides the foundation for diesel engines design, based on traditional methods in thermodynamics, dynamics, structural analysis, chemistry, heat transfer, and applied analysis of system operation. It also offers additional material and examples for the calculation of combustion process, thermal efficiency, heat release, NOx emissions, and diesel turbocharging. Diesel Engine Engineering-2nd Edition demonstrates details of diesel engine performance with graphs and schematic diagrams, illustrates the characteristics and modes of diesel engine operation, describes the analytical models for calculation of thermodynamics parameters, in-cylinder cycles and emissions, discusses how various design factors affect engine performance, efficiency, emissions, the system reliability, offering correct techniques to improve performance, stability, and endurance.