# Introduction to naval architecture /

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Monografía

The leading single volume introduction to naval architecture by one of the subject's best-known authors Provides a perfect introduction to the topic for newcomers to the field and a compact overview for related marine professionals needing a working knowledge of the area Updated to cover key developments including the latest assessments of damaged stability and the increased use of computational methods and modelling in ship design Combines broad scope with authoritative detail, all in the accessible and approachable style associated with experienced naval architecture author Eric Tupper Introduction to Naval Architecture is the most well-known and trusted introduction to the principles affecting the design, construction and operation of marine vessels and structures. It offers a wide ranging yet clear and concise technical guide to the basics of this broad field, with minimal emphasis on complex equations and mathematics. Written by an award-winning naval architecture author, this new edition has been fully updated to cover recent advances and developments in naval architecture. It is ideal for students approaching the subject for the first time, experienced naval architects requiring an up-to-date reference, and other marine professionals needing a working knowledge of the area. Provides a perfect introduction to naval architecture for newcomers to the field and a compact overview for related marine professionals needing a working knowledge of the areaUpdated to cover key developments including double-hulled tankers and the increased use of computational methods and modeling in ship design. Draws on the experience of renowned naval architecture author Eric Tupper to provide extensive scope and authoritative detail, all in an accessible and approachable style



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**Contenido:** Machine generated contents note: General -- Naval Architecture and the Naval Architect -- Safety -- The Impact of Technology and Computers -- Summary -- Introduction -- Definition -- Displacement and Tonnage -- Freeboard and Load Lines -- International and National Regulatory Bodies -- Standards -- Summary -- Introduction -- Approximate Integration -- Spreadsheets -- Summary -- Introduction -- Equilibrium -- The Metacentre -- Trim -- Hydrostatic Curves -- Problems in Trim -- Transverse Weight Movements -- Summary -- Introduction -- The Approach -- Stability at Small Angles -- Special Cases in Stability -- The Inclining Experiment -- Stability at Large Angles -- Statical Stability (GZ) Curves -- Cross Curves of Stability -- Weight Movements -- Dynamical Stability -- External Influences -- Stability Standards for the Intact Ship -- IMO Criteria -- Warship Intact Stability -- Comment on Stability Standards -- Stability of Small Craft -- Flooding and Damaged Stability Stability in the Damaged State -- The Probabilistic Approach -- Stability Standards for the Damaged Ship -- Damage Stability Standards for Warships -- Continuing Work -- Summary -- Introduction -- Launching -- Docking -- Grounding -- Summary -- Introduction -- Fluid Flow -- Numerical Methods and Computational Fluid Dynamics -- Types of Resistance -- Calculation of Resistance -- Methodical Series -- Roughness -- Resistance in Shallow Water -- Form Parameters and Resistance -- Model Experiments -- Full-Scale Trials -- Effective Power -- Summary -- Introduction -- General Principles -- Propulsors -- The Screw Propeller -- Propeller Thrust and Torque -- Presentation of Propeller Data -- Hull Efficiency Elements -- The ITTC Performance Prediction Method -- Cavitation -- Other Propulsor Types -- Ship Trials -- Main Machinery Power -- Summary -- Introduction -- The Ocean Environment -- The Atmosphere -- The Ocean -- Ice and Cold Weather -- Other Extreme Environments -- Marine Pollution Human Factors -- The Internal Environment -- Summary -- Introduction -- Ship Responses -- Ship Motions -- Presentation of Motion Data -- Limiting Factors -- Overall Seakeeping Performance -- Acquiring Seakeeping Data -- Hazards Due to Wave Resonance Effects -- Deriving the Motions -- Effect of Ship Form -- Stabilisation -- Summary -- Introduction -- Ship Vibrations -- Calculations -- Vibration Levels -- Noise -- Shock -- Summary -- Introduction -- Directional Stability and Control -- Manoeuvring -- Manoeuvring Devices -- Rudder Area, Forces and Torques -- Ship Handling -- Dynamic Stability and Control of Submarines -- Underwater Vehicles, General -- Predictions of Manoeuvrabilty -- Modifying a Ship's Manoeuvring Performance -- Summary -- Introduction -- Nature of a Ship's Structure -- Modes of Failure -- Forces on a Ship -- Longitudinal Strength in Waves -- Section Inertia and Modulus -- Superstructures -- Standard Calculation Results -- Strength of Individual Structural Elements Transverse Strength -- Some Other Structural Considerations -- Horizontal Flexure and Torsion -- Load-Shortening Curves -- Finite Element Analysis -- Corrosion -- Overall Structural Safety -- Summary -- Introduction -- The Requirements -- The Design Phases -- A Methodical Design Approach -- Design Configuration -- CAD Systems -- Costs -- Some General Design Problems -- Safety -- Summary -- Introduction -- Merchant Ships -- Specialist Vessels -- High-Speed Craft -- Warships -- Summary

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