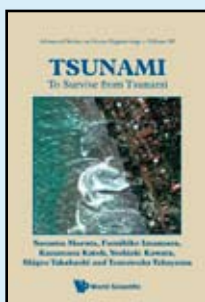


OCEAN/ COASTAL ENGINEERING TEXTBOOKS 2010

Advanced Series on Ocean Engineering – Vol. 32
TSUNAMI: To Survive from Tsunami

by **Susumu Murata** (*Coastal Development Institute of Technology, Japan*), **Fumihiko Imamura** (*Tohoku University*), **Kazumasa Katoh** (*Musashi Institute of Technology*), **Yoshiaki Kawata** (*Kyoto University*), **Shigeo Takahashi** (*Port and Airport Research Institute, Japan*) & **Tomotsuka Takayama** (*Kyoto University*)

The book is composed of two parts: the first consisting of three chapters on how to survive a tsunami by (i) describing lessons obtained from actual tsunami disasters, (ii) imparting fundamental knowledge of tsunami science for survival, and (iii) listing measures for mitigation.



The second part provides more detailed scientific knowledge on tsunamis and consists two chapters: one describes tsunami occurrence mechanism and near-shore behavior; the other mentions numerical simulation and tsunami forecasting.

“Even for research engineers in the field of coastal engineering, this book is indispensable for depicting real images of tsunami threat. By reading the book, a researcher will realize the importance of his or her study of tsunami disaster mitigation.”

Professor Emeritus Yoshimi Goda
Yokohama National University

Readership: Undergraduates and graduates interested in tsunamis, tsunami mitigation planners, oceanographers and physicists, especially residents in tsunami prone areas.

316pp **Oct 2009**
978-981-4277-47-1 **US\$48** **£36**

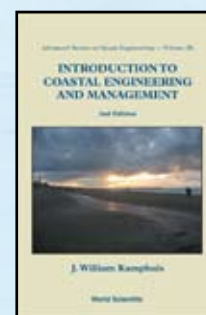
Advanced Series on Ocean Engineering – Vol. 30
INTRODUCTION TO COASTAL ENGINEERING AND MANAGEMENT
(2nd Edition)

by **J William Kamphuis** (*Queen’s University, Canada*)

This textbook discusses the traditional methods of analysis and synthesis (design), but also contemporary design taking into account environmental impacts, consequences of failure, and current concerns such as global warming, aging infrastructure, working with stakeholder groups, regulators, etc. This second edition expands greatly on current topics of failure and resilience that surfaced as a result of recent disasters from hurricane surges and tsunamis. It also updates the discussion of design and decision making in the 21st century, with many new examples presented.

Readership: Undergraduate and graduate students, researchers and academics in coastal engineering and management.

| | | |
|--------------------------------|-----------------|------------|
| 600pp (approx.) | Feb 2010 | |
| 978-981-283-484-3 | US\$98 | £74 |
| 978-981-283-485-0 (pbk) | US\$55 | £41 |



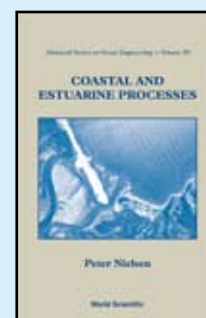
Advanced Series on Ocean Engineering – Vol. 29
COASTAL AND ESTUARINE PROCESSES

by **Peter Nielsen** (*The University of Queensland, Australia*)

This book is an introductory treatment to coastal and estuarine processes for earth scientists or engineers. Suitable for a first course on the subject, it covers water waves, surf zone hydrodynamics, tides in oceans and estuaries, storm surges, estuarine mixing, basic sediment transport, coastal morphodynamics and coastal groundwater dynamics. It contains a substantial amount of new material. For example, the explicit, analytical treatment of transient, forced long waves strongly enhances the discussion on tsunami, storm surges and surf beat. To serve as an effective reference book for professionals, the book is fully indexed and comprehensively cross referenced.

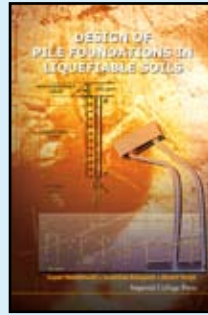
Readership: Undergraduate and graduate students, researchers and engineers in coastal, civil and environmental engineering.

| | | |
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| 360pp | Apr 2009 | |
| 978-981-283-711-0 | US\$88 | £66 |
| 978-981-283-712-7 (pbk) | US\$58 | £44 |



DESIGN OF PILE FOUNDATIONS IN LIQUEFIABLE SOILS

by **Gopal Madabhushi** (University of Cambridge, UK), **Jonathan Knappett** (University of Dundee, UK) & **Stuart Haigh** (University of Cambridge, UK)



This book provides many case histories of failure of pile foundations due to earthquake loading and soil liquefaction. Based on the observed case histories, the possible mechanisms of failure of the pile foundations are postulated. The book also deals with the additional loading attracted by piles in liquefiable soils due to lateral spreading of sloping ground. Recent research at Cambridge forms the backbone of this book with the design methodologies being developed directly based on quantified centrifuge test results and numerical analysis.

Readership: Researchers, academics, designers and graduate students in earthquake engineering, civil engineering and ocean/coastal engineering.

232pp Sept 2009
978-1-84816-362-1 US\$72 £54

Advanced Series on Ocean Engineering

RANDOM SEAS AND DESIGN OF MARITIME STRUCTURES (3rd Edition)

by **Yoshimi Goda** (Yokohama National University, Japan)

Random waves are the most important constituent of the sea environment, as they make the design of maritime structures quite different from that of structures on land. In this book, the concept of random waves for the design of breakwaters, seawalls, and harbor structures is fully explored for easy comprehension by practicing engineers. Theoretical aspects are also discussed in detail for further studies by graduate students and researchers. This edition adds further development in theory and engineering practice related to random sea waves in recent years. Includes new materials, such as surf zone hydrodynamics, wave overtopping and transmission, probabilistic design approach, nearshore current prediction, and beach deformation problems

Readership: Advanced undergraduate and graduate students, and practitioners in coastal and harbor engineering.

600pp (approx.) Scheduled Summer 2010
978-981-4282-39-0 US\$92 £69
978-981-4282-40-6(pbk) US\$52 £39

Advanced Series on Ocean Engineering

COASTAL DYNAMICS

by **Willem T Bakker** (Delft Hydraulics, Netherlands)

Our world is constantly changing, governed by continuity, dynamic interactions and boundary conditions. For many coasts, the common denominators contributing to these changes are sand, waves, tides, salt gradients, and human interaction, all themes that are treated in this valuable textbook. Confining itself to essentials, the coverage reflects centuries of theoretical and practical knowledge of Dutch coastal engineers. Focussing, where applicable, on linear theory, the book shows how the essentials of local coastal behavior can be reproduced and predicted.

Readership: Graduate students and researchers in ocean and coastal engineering and management.

450pp (approx.) Scheduled Summer 2010
978-981-270-373-6 US\$99 £56

Advanced Series on Ocean Engineering

DYNAMICS OF FLOATING OFFSHORE STRUCTURES

by **Subrata K Chakrabarti** (Offshore Structure Analysis, Inc., USA)

This book will provide a complete coverage on the dynamics of floating offshore structures. Topics like random waves, wind and current, etc. will be developed from the fundamental principles and their applications to offshore structures will be discussed. The design aspect of the offshore structure, both for short-term and long-term response and structural fatigue, are important elements of the dynamic response and will be further elaborated upon in the text.

Readership: Senior undergraduate, graduates and researchers in offshore and ocean engineering.

600pp (approx.) Scheduled Fall 2010
978-981-4280-55-6 US\$95 £71
978-981-4280-56-3(pbk) US\$55 £41

:: Bestselling Textbook

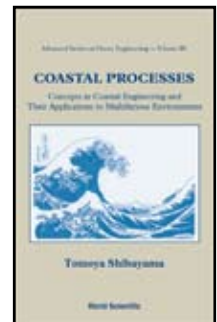
Advanced Series on Ocean Engineering – Vol. 28

COASTAL PROCESSES:

Concepts in Coastal Engineering and Their Applications to Multifarious Environments

by **Tomoya Shibayama** (Yokohama National University, Japan)

This book provides us with important concepts in coastal engineering, their applications to coastal processes and disaster prevention works. The first part describes basic concepts of coastal engineering, dealing mainly with wave-induced physical problems in the field of coastal engineering and hydraulics. The second part consists of the author's results of 30 years of scientific research on the progress of coastal sediment transport and coastal disasters. In terms of sediment transport study, the book covers not only coastal zones but also sediment production in river basins and river sediment transport to understand the present reasons for coastal erosion.



Readership: Senior undergraduate and graduate students, researchers, academics and engineers in coastal and ocean engineering.

228pp Dec 2008
978-981-281-395-4 US\$58 £31

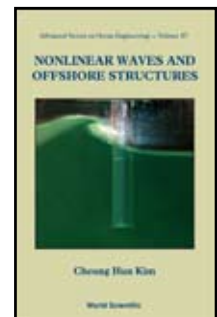
:: Bestselling Textbook

Advanced Series on Ocean Engineering – Vol. 27

NONLINEAR WAVES AND OFFSHORE STRUCTURES

by **Cheung Hun Kim** (Texas A&M University, USA)

This book deals with analyses of nonlinear problems encountered in the design of offshore structures, as well as those that are of immediate practical interest to ocean engineers and designers. It presents conclusions drawn from recent research pertinent to nonlinear waves and their effects on the responses of offshore structures.



Readership: Ocean engineers.

540pp May 2008
978-981-02-4884-0 US\$119 £65
978-981-02-4885-7(pbk) US\$72 £39

DIMENSIONAL ANALYSIS AND INTELLIGENT EXPERIMENTATION

by **Andrew C Palmer** (National University of Singapore, Singapore)

This book demonstrates what can be done with dimensional analysis through a series of examples, starting with Pythagoras' theorem and the simple pendulum, and going on to a number of practical examples, many from the author's experience in ocean engineering. In parallel, the book explains the underlying theory, starting with Vaschy's elegant treatment, whilst avoiding unnecessary complexity. It also explores the use and misuse of models, which can be useful but can also be seriously misleading.



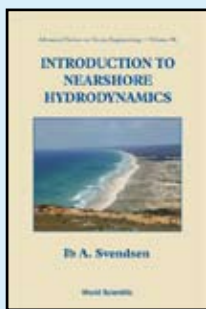
Readership: Undergraduate and graduate (MSc) students interested in dimensional analysis.

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| 164pp | Jun 2008 | |
| 978-981-270-818-2 | US\$45 | £25 |
| 978-981-270-819-9(pbk) | US\$29 | £17 |

Advanced Series on Ocean Engineering – Vol. 24
INTRODUCTION TO NEARSHORE HYDRODYNAMICS

by **Ib A Svendsen** (University of Delaware, USA)

This book is intended as an introductory textbook for graduate students and as a reference book for engineers and scientists working in the field of coastal engineering. As such it gives a description of the theories for wave and nearshore hydrodynamics. It is meant to de-mystify the topics and hence starts at a fairly basic level. It requires knowledge of fluid mechanics equivalent to a first year graduate level. At the end of each topic, an attempt is made to give an overview of the present stage of the scientific development in that area with numerous references for further studies.



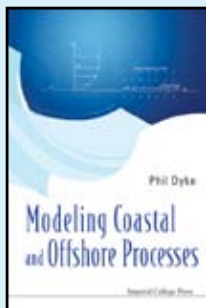
Readership: Coastal engineering graduate students and scientists, and practicing engineers working with coastal engineering modeling.

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| 744pp | Dec 2005 | |
| 978-981-256-142-8 | US\$125 | £69 |
| 978-981-256-204-3(pbk) | US\$66 | £37 |

MODELING COASTAL AND OFFSHORE PROCESSES

by **Phil Dyke** (University of Plymouth, UK)

Modeling is now a major tool for important environmental strategies. This book allows the non-specialist reader to understand and criticize current models of the shallow sea and coastal environments. Sufficient background on mathematics and statistics is covered, but readers disinclined to spend time on this may use the book as a reference guide in modeling. Topics include the numerical schemes used, modeling the sea bed, modeling shallow sea dynamics and, unusually for this type of book, modeling ecosystems and animals.



Readership: Researchers in coastal oceanography, ecosystems dynamics and marine biological modeling; final year undergraduate or postgraduate students in civil engineering, coastal engineering, environmental science and marine science.

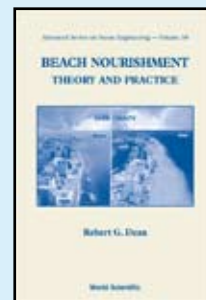
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| 412pp | Apr 2007 | |
| 978-1-86094-674-5 | US\$95 | £49 |
| 978-1-86094-675-2(pbk) | US\$56 | £29 |

Advanced Series on Ocean Engineering – Vol. 18

BEACH NOURISHMENT: Theory and Practice

by **Robert G Dean** (University of Florida, USA)

“Professor Dean has developed many theoretical, physically sound concepts for beach nourishment design and evaluation, which are easy to apply in practice. The merit of this book is that it collects all of his earlier work and puts it into a comprehensive perspective. The book is a must for nourishment designers and a starting point for coastal scientists interested in nourishment performance.” **Marcel J F Stive, Chair of Coastal Engineering, Delft University of Technology**



Readership: Engineers and geologists.

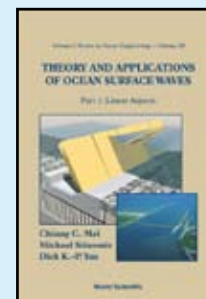
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| 420pp | Jan 2003 | |
| 978-981-02-1547-7 | US\$96 | £65 |
| 978-981-02-1548-4(pbk) | US\$48 | £32 |

Advanced Series on Ocean Engineering – Vol. 23

THEORY AND APPLICATIONS OF OCEAN SURFACE WAVES

Part 1: Linear Aspects
Part 2: Nonlinear Aspects

by **Chiang C Mei** (Massachusetts Institute of Technology, USA), **Michael Stiassnie** (Technion-Israel Institute of Technology, Israel) & **Dick K-P Yue** (Massachusetts Institute of Technology, USA)



“Overall, the book remains a major resource for graduate students in ocean engineering and applied mathematics. The new material that has been added is certainly appropriate.”

Mathematical Reviews

“Much of the introductory material is well presented, and followed by many specific examples, often with full mathematical detail ... These books can certainly benefit graduate students and researchers, and Part 2 is a worthwhile improvement over the earlier editions.” **Journal of Fluid Mechanics**

Readership: Graduate students and lecturers in coastal and ocean engineering, as well as theoretical engineers, applied mathematicians and geophysicists.

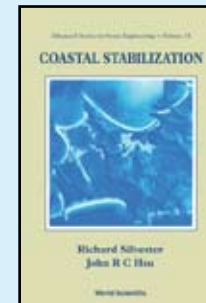
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| 1136pp | Jul 2005 | |
| 978-981-238-894-0(pbk)(set) | US\$99 | £56 |

Advanced Series on Ocean Engineering – Vol. 14

COASTAL STABILIZATION

by **Richard Silvester** & **John R C Hsu** (Univ. of Western Australia)

This book discusses coastal defense measures, which have not improved in the past few decades, and better alternatives. It emphasizes on the existence of stable bays in coastal geomorphology and their use in coastal stabilization. The conventional measures for saving beaches, such as seawalls, groins, offshore breakwaters, and renourishment, are discussed in detail, followed by an alternative known as headland control. Many issues requiring attention in coastal engineering are also outlined.



Readership: Civil and coastal engineers, coastal managers in local governments, geographers, and geologists.

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| 596pp | Jul 1997 | |
| 978-981-02-3137-8 | US\$94 | £65 |
| 978-981-02-3154-5(pbk) | US\$48 | £33 |

Ocean/Coastal Engineering Textbooks 2010

Advanced Series on Ocean Engineering – Vol. 2

WATER WAVE MECHANICS FOR ENGINEERS AND SCIENTISTS

by **Robert G Dean** (University of Florida, USA) & **Robert A Dalrymple** (University of Delaware, USA)

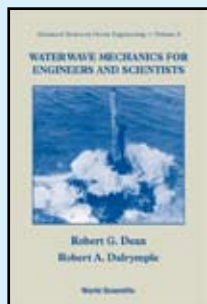
“Chapter on wave maker theory is new material, generally not found in text books. The authors pull together good stuff from various widely scattered sources ... the book makes a good impression ... it is worth having a copy of this book on your desk.”

T S Murty, Marine Geodesy

The book commences with a review of fluid mechanics and basic vector concepts. The formulation and solution of the governing boundary value problem for small amplitude waves are developed and the kinematic and pressure fields for short and long waves are explored. The transformation of waves due to variations in depth and their interactions with structures are derived. Wavemaker theories and the statistics of ocean waves are reviewed.

Readership: Coastal and ocean engineers.

368pp **Jan 1991**
978-981-02-0421-1 (pbk) **US\$32** **£23**



Advanced Series on Ocean Engineering – Vol. 20

THE THEORY AND PRACTICE OF HYDRODYNAMICS AND VIBRATION

by **Subrata K Chakrabarti** (Offshore Structure Analysis, Inc, Illinois, USA)

“This book is straightforward and enjoyable to read ... it is a useful text for a course in which the practical application of tools learned in other courses in an engineering curriculum is investigated. It is also useful for a first course on fluid-structure interaction. An instructor can use this textbook to provide a reasonably good overview of the fundamentals of engineering science and how the fundamentals are applied to solve practical problems.”

Journal of Offshore Mechanics and Arctic Engineering

Readership: Upper level undergraduates, post-graduates, academics and practitioners in mechanical and civil engineering.

484pp **Nov 2002**
978-981-02-4921-2 **US\$82** **£60**
978-981-02-4922-9 (pbk) **US\$46** **£34**



Advanced Series on Ocean Engineering – Vol. 4

COASTAL BOTTOM BOUNDARY LAYERS AND SEDIMENT TRANSPORT

by **P Nielsen** (University of Queensland)

“The book has a good balance between mathematics and discussions of the physics involved. The author has certainly produced a well-written, carefully organized and informative book representing an important link between boundary layer flow models and the resulting sediment transport. It is on this basis that I recommend the book, which should be very useful for both scientists and engineers working in the area of coastal process modelling. The book should also be well suited for use in graduate student courses.”

D Myrhaug, Coastal Engineering

Readership: Coastal engineers and scientists, marine geologists and coastal geomorphologists.

340pp **Jul 1992**
978-981-02-0472-3 **US\$64** **£46**
978-981-02-0473-0 (pbk) **US\$32** **£23**

Advanced Series on Ocean Engineering – Vol. 3

MECHANICS OF COASTAL SEDIMENT TRANSPORT

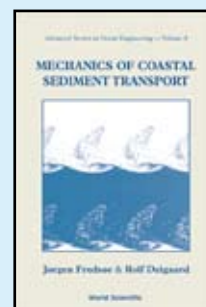
by **Jørgen Fredsøe & Rolf Deigaard** (Technical University of Denmark)

“... this is a very interesting text that will assist a number of young scientists dealing with sediment transport ... The material is explained quite clearly and the approach is quite analytical, making this text most valuable to coastal engineers and scientists ...”

Journal of Hydraulic Engineering

Readership: Ocean and electronics engineers, geologists, mathematical physicists and graduate students.

392pp **Nov 1992**
978-981-02-0840-0 **US\$67** **£49**
978-981-02-0841-7 (pbk) **US\$32** **£23**



Advanced Series on Ocean Engineering – Vol. 17

THE MECHANICS OF SCOUR IN THE MARINE ENVIRONMENT

by **B Mutlu Sumer & Jørgen Fredsøe** (Technical University of Denmark)

“All in all, this book provides a step-by-step guidance with simple formulae and worked examples, as well as in-depth discussions and derivations. The writing style and organisation of the material is easy to follow, the figures are very clear, and the price is inexpensive making it well worth adding to the bookshelf.”

Professor Richard Soulsby, Coastal Engineering

Readership: MSc and PhD students as well as consulting engineers in ocean and environmental engineering.

552pp **Apr 2002**
978-981-02-4930-4 **US\$82** **£60**

COMPRESSIBILITY OF ULTRA-SOFT SOIL

by **Myint Win Bo** (DST Consulting Engineers Inc., Canada)

This book describes the compression behavior of ultra-soft soil upon additional load application. Various types of laboratory compression tests suitable for this type of soil are discussed, such as tests using small- and large-scale consolidometers, hydraulic Rowe cells under different drainage conditions, constant rate of loading and constant rate of strain tests.

Readership: Graduate students, academics, researchers, engineers, and contractors in civil engineering, coastal engineering and geotechnical engineering.

332pp **Apr 2008**
978-981-277-188-9 **US\$76** **£39**

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