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**MARE -Marine Coastal and Delta  
Sustainability for Southeast Asia**



## **Bachelor's course Port and Marine Constructions**

### **A. Abstract**

**Description:** The course provides basic knowledge of port and marine constructions; the basic factors to consider in the design of port planning; port master plan; environmental conditions to consider when designing and planning ports and marine structures; planning and design of port's waters; port design and marine structures.

**Objectives:** Students understand an overview of ports and structures, know the role of ports and marine structures in economic development; identify factors related to port planning; understand the port master planning and environmental conditions to consider when designing or planning ports and marine structures; understand the port water zones planning and design; understand the principles of port and marine engineering. From studying the factors that govern port planning, students can understand a particular port or marine facility planning design.

**Learning outcomes:** Students can describe an overview of ports and marine structures, find out key factors to consider in the port planning and designing, and list environmental conditions to consider when designing and planning ports and marine structures. Students can present the general knowledge about ports and structures, the role of ports and structures in economic development, the basic factors to consider in port planning design; port master plan and the principles of port design and marine structures. Students can apply knowledge to plan and design basically port water areas and port or marine structures.

**Contents:** The course consist of the following topics:

1. Overview of ports and the role of ports in economic development
2. Basic factors to consider in port planning & design
3. Environmental conditions
4. Planning and designing port's land
5. Port's waters planning and design
6. Mechanization of cargo handling in ports
7. Port warehouse design and plan
8. Marine constructions and auxiliary equipments.



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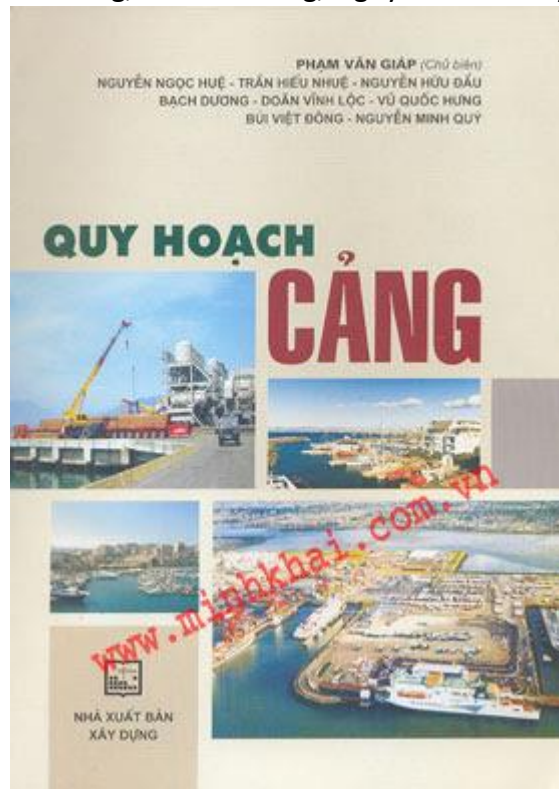
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## B. Literature & References

### Port Planning

Pham Van Giap (Corresponding Author),  
Nguyen Ngoc Hue, Tran Hieu Nhue, Nguyen  
Huu Dau, Bach Duong, Doan Vinh Loc, Vu Quoc  
Hung, Bui Viet Dong, Nguyen Minh Quy



### Port Planning book's abstract

The book "Port Planning" introduces contents as follows:

- The role of ports in marine economic development, along with the natural incentives that nature gives to Vietnam's seaport system.
- Fully updated methodologies for cargo forecasting, ship forecasting, passenger forecasting, queuing theory, simulation theory, economic efficiency analysis, environmental impact assessment... All contents This new content contains the law of opening times with nuances of commodity economic development.
- There are full aspects of port planning, territorial planning, port basin planning, routing of ships in and out of the port tank, system planning, strategic planning, planning both present and future, static and dynamic planning.
- Full introduction of loading and unloading operation diagrams with modern machinery and equipment for many types of import and export goods.
- The book covers most types of ports such as: international transshipment port, deep water port, island port, container port, ferry port - passenger port, tourist -

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sport port, fishing port, military port, dry port, dedicated port, Feeder collection port, gateway port, river port, lake port, inland port, world seaport.

- A particularly important content for port development in a sustainable environment is environmental impact assessment.

### **Table of contents**

- Chapter 1: The role of ports in marine economic development
- Chapter 2: Geographical location and natural incentives for seaport development
- Chapter 3: The concept of seaports
- Chapter 4: Ships
- Chapter 5: Natural conditions for seaport development
- Chapter 6: Quantity and methods of forecasting quantity
- Chapter 7: Economic analysis of port exploitation and development
- Chapter 8: Queuing theory determines the number of berths
- Chapter 9: Port tank planning
- Chapter 10: Stream into the port
- Chapter 11: Port territory planning
- Chapter 12: Loading and unloading equipment
- Chapter 13: Introduction to Vietnam's current and future seaport system
- Chapter 14: Introduction of large-scale seaports in the world
- Chapter 15: Port development in environmental planning and sustainable development

### **Target group**

The book is intended for bachelors, masters, PhD candidates and engineers related with port and marine constructions.

### **Book imprints**

Pham Van Giap (Corresponding Author), Nguyen Ngoc Hue, Tran Hieu Nhue, Nguyen Huu Dau, Bach Duong, Doan Vinh Loc, Vu Quoc Hung, Bui Viet Dong, Nguyen Minh Quy. Port Planning. ISBN 5102242189774 - Construction Publishing House, 2011.- 596pp.



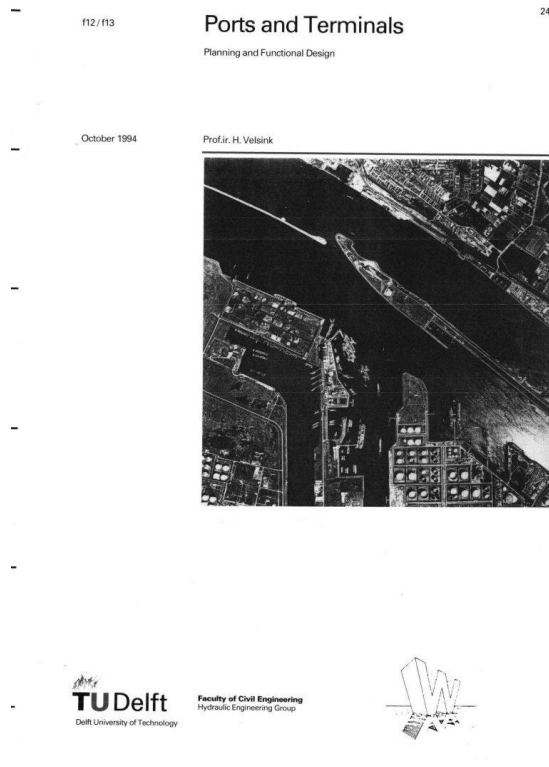
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## **Ports and Terminals: Planning and Functional Design**

Velsink, H.



### **Planning and Functional Design lecture note's abstract**

The lecture note "Port Planning" introduces contents as follows:

1. Maritime transport, means and commodities 3. Principles of integrated port planning 4. Planning and design of a port's water areas 5. Port terminals - introduction 6. Conventional general cargo terminals 7. Container terminals 8. Oil & liquid gas terminals 9. Dry bulk cargo terminals 10. Fishery ports 11. Marinas 12. Ports and terminals for inland water transport

#### **Table of contents**

Chapter 1: Maritime transport: means and commodities  
Chapter 2: Ports and integrated transport chains - introduction  
Chapter 3: Principles of integrated port planning  
Chapter 4. Planning and design of a port's water areas  
Chapter 5. Port terminals - introduction  
Chapter 6. Conventional general cargo terminals  
Chapter 7. Container terminals  
Chapter 8. Oil & liquid gas terminals  
Chapter 9. Dry bulk cargo terminals

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Chapter 10. Fishery ports

Chapter 11. Marinas

Chapter 12. Ports and terminals for inland water transport

### **Target group**

The book is intended for bachelors, masters, PhD candidates and engineers related with port and marine constructions.

### **Book imprints**

Velsink, H.. Ports and Terminals: Planning and Functional Design. TU Delft, Department Hydraulic Engineering, 1993.-276pp.