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PORT AND MARINE CONSTRUCTION

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PREFACE

Ports is the interface between land and water area. Ports can be located by river banks or the sea. The main services provided by ports are loading/unloading services for vessels calling at the port. Besides, ports can provide a wide range of cargo services such as handling, storage, logistics, etc. With an ever growing demand for transporting cargo by waterway and by sea, the roles of ports to eco-social development have been proven significantly overtime.

With complicated operation and the involvement of various equipment and facilities, it is required a very careful and thorough calculation for port design and planning. The lecture notes provides students with basic knowledge of port facilities and their functions, then designing principles and calculation formula are given to learners. Through understandings operations of ports and applying methodologies into practice, students are expected to plan and design basically port water areas and port or marine structures.

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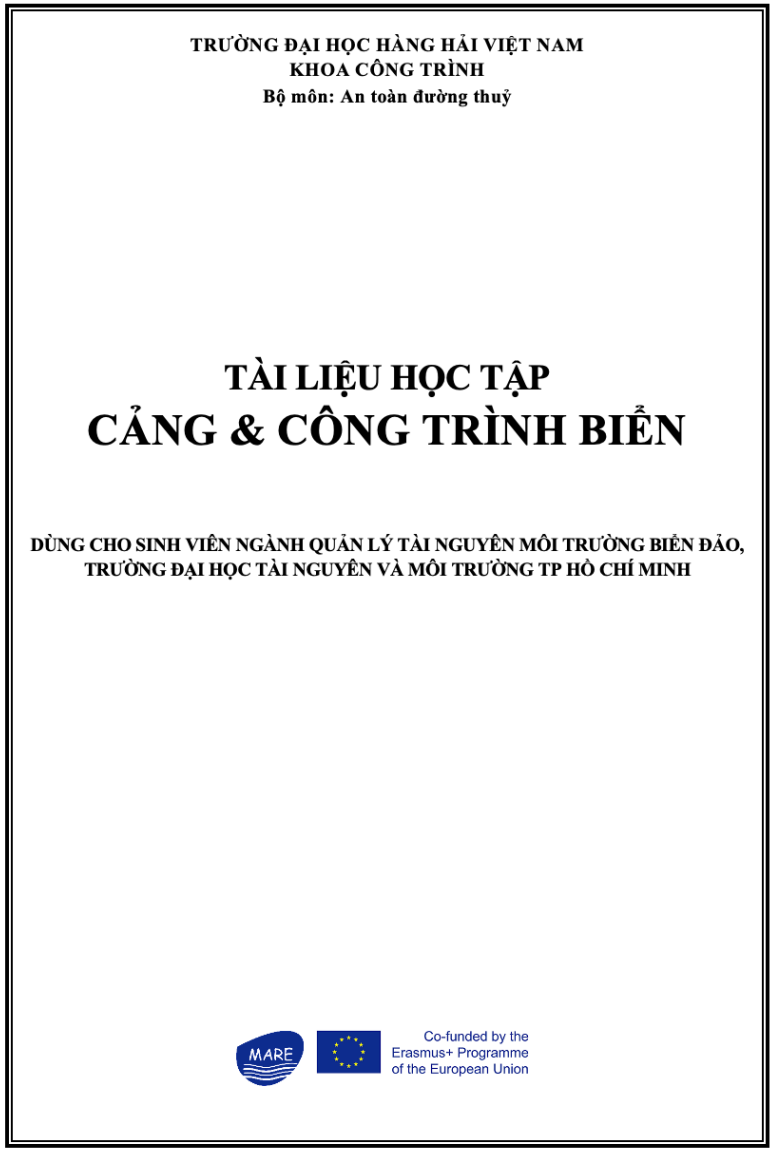
TRƯỜNG ĐẠI HỌC HÀNG HẢI VIỆT NAM
KHOA CÔNG TRÌNH
Bộ môn: An toàn đường thuỷ

TÀI LIỆU HỌC TẬP
CẢNG & CÔNG TRÌNH BIỂN

DÙNG CHO SINH VIÊN NGÀNH QUẢN LÝ TÀI NGUYÊN MÔI TRƯỜNG BIỂN ĐẢO,
TRƯỜNG ĐẠI HỌC TÀI NGUYÊN VÀ MÔI TRƯỜNG TP HỒ CHÍ MINH

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LECTURE NOTES

- The main material used in the course of Port and Marine Construction is the Lecture Notes which is created by Faculty of Hydraulic Engineering, Vietnam Maritime University.
- Target audience: Bachelor students from Ho Chi Minh University of Natural Resources and Environment.
- The document is available in Vietnamese, and should be used in parallel with other reference materials provided in this course.

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LECTURE NOTE CONTENTS

Topic 1. Overview of ports and the roles of ports in economic development

In this first chapter, students are provided with fundamental knowledge of ports, including definition, functions, classifications, and infrastructure,

Topic 2. Basic factors to consider in port planning and design

The chapter 2 investigate various factors determining port planning and design, including: cargo (volume, throughput), vessels (types, size, quantity), cargo handling equipment, natural conditions. Specific impacts and practical evaluations have been thoroughly introduced in this chapter.

Topic 3. Environmental conditions

General principles in port planning are introduced with calculation formula to design the hinterland and water area of ports.

Topic 4. Port's water planning and design

This chapter introduces the water area in a port and its functions. Then, principles and calculation formula to design the water area of both seaports and river ports are presented to facilitate all the activities required for vessels.

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LECTURE NOTE CONTENTS

Topic 5. Planning and designing the port's land

This chapter introduces the hinterland area in a port and its functions. Then, principles and calculation formula to design the land area of both seaports and river ports are presented to facilitate all the handling activities required for cargo.

Topic 6. Mechanization of cargo handling in ports

Cargo handling equipment and operations are introduced in this chapter. Also, formula and methods to optimize the choice of cargo handling option are provided.

Topic 7. Port warehouse design and plan

Another important facility at Port is warehouse and yard where cargo is kept. Depend on the types and volume of cargo, as well as type of vessels served, the capacity of warehouse and yard are determined based on given formula.

Topic 8. Marine construction on auxiliary types of equipment

Besides essential infrastructures, there are several auxiliary equipment which must be provided at ports to facilitate its regular operation. Their functions, design and selection criteria are clearly introduced in this chapter.

Thank you

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