



# **BASIC COASTAL & HARBOUR ENGINEERING**

**A basic but comprehensive course for those who have to do with the sea and the shore.**

**Presented by**

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# **PROSPECTUS**

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## Training Course for Dockmasters

### INTRODUCTION

This course has been developed by Keith Mackie. It is based on a lifetime of experience in the field of coastal and harbour engineering, building the South African suite of fishing harbours. It is a completely fresh and practical approach to the whole subject.

It was for his work in this field that he was awarded the SAICE Basil Read Gold Medal for Construction in 1988.

Delegates to the course will be issued with a personal copy of this textbook **Basic Coastal & Harbour Engineering**. Since all the essential formulae have been included in the textbook, it will serve as a very useful reference that will cover most of the problems encountered in normal coastal and harbour engineering. The section on dry-docking is unique in that it is one of the few texts covering the field coherently and in the case of the mechanical systems, is the most advanced material available in this field.

The course and the textbook are intended to provide an overview of the subject and to impart a sound common sense towards the sea for those who are not specialists in the field but occasionally have to do with the sea and the shore. As such, the course and the textbook will be very accessible to those engineers who remain numerate but no longer use advanced theory.

It will give them an awareness of when specialists are needed and the ability to instruct them and understand their reports.

Although the textbook follows an engineering style, it will be equally accessible and useful to planning professionals and to others who also have to do with the sea and the shore and are merely numerate without a mathematical background.

For those who specialise in coastal engineering, the course will act as a useful refresher or, for those intending to embark on that route, as a useful primer.

*Who should attend?*

The course and the text book are intended for a wide range of people concerned with the field:—

- ◆ Engineers working in conventional fields but in situations that impinge on the marine environment.
- ◆ Engineers working in coastal engineering as a practical refresher.
- ◆ Technicians and others with a practical involvement in the field who need a background course to guide them.
- ◆ Planners and Environmentalists working in the marine environment who need a comprehensive guide that they can understand.
- ◆ Since the course is non-mathematical, it would suit others who might have a concern with the sea or the shore.

Participants need to be numerate and literate in English. Technical material has been simplified so as to give an understanding of the topics and an ability to use the formulae without a need for mathematics. Those with advanced technical backgrounds can look up the standard theories for themselves and the text and the course will provide them with an insight into the application of these theories and the intricacies of the subject that is not available elsewhere.

Lunch and tea are considered to be a part of the program. They provide time for general unstructured group discussion around the subject and provide continuity to the course.

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### COURSE SPECIFICATION

- Course Title:** Basic Coastal & Harbour Engineering
- Course Structure:** The course will be presented in a lecture format that reviews and explains the material in the text book. It can be presented in either a 2 day short course or a 5 day long course format, subject to requirements.
- Objective:** This course does not presume any prior knowledge of the field but it does presume some familiarity with the sea and the shore. It is designed to give people with an interest in the field, a background to the field, a basic knowledge of the theoretical principles that apply, to correct misconceptions and leave them with a sound common sense towards the sea and the shore.
- Class Size:** The class size is unrestricted.
- Pre-requisites:** Prior theoretical knowledge is not a prerequisite but prior experience of the sea and the shore beyond knowing that the sea is blue and wet will assist participants in empathising with the course material.
- Participants need to be numerate and literate in English with at least a good trade background. Technical material has been simplified to give an understanding of the topics and an ability to use the formulae without a need for mathematics.
- Benefits:** The course promotes a common sense approach to the sea and the shore, to coastal management and harbour engineering. Participants will gain an understanding of how the marine environment through waves, corrosion and sand movement etc. impacts on coastal structures and how man-made intervention in turn impacts on the environment. They will also gain an insight into the legal and social interactions between people, the sea and the shore and coastal and harbour structures.
- Summary of Aims:**
- a) To understand the provenance of the sea and the shore, of the structures that are built there and of the way they are used by people.
  - b) To gain an intuitive understanding of the interaction of the sea and the shore; an awareness of the behaviour of structures and interventions in this area; an awareness of the potential danger points and a sense of when to call in specialist assistance.
  - c) To understand simple formulae and how to use them.
  - d) To be familiar with the sea and the shore.

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- e) To have a knowledge of the management and maintenance of marine structures, the environment and the dangers of pollution.
- f) To be able to instruct specialist consultants and laboratories and be able to understand their reports.

### Teaching and Learning Strategy:

Each participant will be provided with a copy of the text **Basic Coastal & Harbour Engineering**.

A *Powerpoint* presentation will be used to display the pages of the text being discussed and any other illustrative material which will be presented in accordance with the ideas of Richard Skemp that:–

1. *Concepts of a higher order than those which people already have cannot be communicated to them by a definition but only by arranging for them, to encounter a suitable collection of examples*
2. *Since in mathematics these examples are almost invariably other concepts it must first be ensured that these are already formed in the mind of the learner*

Short Course (2-day)

This is an intensive course and takes the form of a presentation of the material in the textbook, that explains the material page by page. It is intended to fix the content of the book in the minds of the participants and give them a basic understanding of that material, of how to approach it and how to use it.

Long Course (5 days)

The presentation will be similar to that of the short course but the presentation will be more thorough and more time will be given to explanations and examples.

Afternoons will be given to tutorials and discussion.

At the end of the course, participants will be issued with a bound copy of model answers to the tutorials to file with the textbook as a reference on how to use the text.

Lunch and tea are considered to be part of the program. They provide time for general unstructured group discussion around the subject and provide continuity to the course.

## Training Course for Dockmasters

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### COURSE PROGRAMME

#### Short (2-day) course

The daily programme will be:

From	To	Day 1	Day 2
08.30	09.00	<i>Welcome – Registration – Coffee</i>	
09.00	09.50	Lecture	Lecture
09.50	10.00	<i>Break</i>	<i>Break</i>
10.00	10.50	Lecture	Lecture
10.50	11.10	<i>Tea</i>	<i>Tea</i>
11.10	12.00	Lecture	Lecture
12.00	12.10	<i>Break</i>	<i>Break</i>
12.10	13.00	Lecture	Lecture
13.00	14.00	<i>Lunch</i>	<i>Lunch</i>
14.00	14.50	Lecture	Lecture
14.50	15.10	<i>Tea</i>	<i>Tea</i>
15.10	16.00	Lecture	Lecture
16.00	16.10	<i>Break</i>	<i>Closure</i>
16:10	17:00	Discussion	

#### Long (5-day) course

The daily programme will be:

From	To	Day 1	Day 2	Day 3	Day 4	Day 5
08.30	09.00	<i>Welcome – Registration – Coffee</i>				
09.00	09.50	Lecture	Lecture	Lecture	Lecture	Lecture
09.50	10.00	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>
10.00	10.50	Lecture	Lecture	Lecture	Lecture	Lecture
10.50	11.10	<i>Tea</i>	<i>Tea</i>	<i>Tea</i>	<i>Tea</i>	<i>Tea</i>
11.10	12.00	Lecture	Lecture	Lecture	Lecture	Lecture
12.00	12.10	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>
12.10	13.00	Lecture	Lecture	Lecture	Lecture	Lecture
13.00	14.00	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>	<i>Lunch</i>
14.00	14.50	Lecture	Lecture	Lecture	Lecture	Lecture
14.50	15.10	<i>Tea</i>	<i>Tea</i>	<i>Tea</i>	<i>Tea</i>	<i>Tea</i>
15.10	16.00	Tutorial	Tutorial	Tutorial	Tutorial	Discussion
16.00	16.10	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Closure</i>
16:10	17:00	Tutorial	Tutorial	Tutorial	Tutorial	