



المركز العالمي للتدريب والتطوير
International Centre For Training & Development



Waterfront Structural Design



International Association
for Health and Occupational Safety
and the Environment



Course Introduction:

This course offers a comprehensive overview of the principles and practices involved in designing waterfront structures. Participants will learn about the unique challenges and considerations of waterfront engineering, including environmental factors, material selection, and structural integrity.

Course Objectives:

Upon the successful completion of this course, each participant will be able to:-

- Understand the fundamental principles of waterfront structural design.
- Familiarize with various types of waterfront structures (docks, piers, seawalls).
- Learn about site assessment, environmental impacts, and regulatory requirements.
- Gain skills in design methodologies and analysis techniques.
- Develop an awareness of best practices in sustainable waterfront development.

Who Should Attend?

- Civil and structural engineers
- Environmental engineers and consultants
- Project managers and planners
- Architects and landscape designers
- Anyone involved in waterfront construction and design projects

Course Outline:

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Day 1: Introduction to Waterfront Engineering

- **Morning Session**
 - Overview of waterfront structures: definitions and types
 - Importance of waterfront design in urban and rural settings
- **Afternoon Session**
 - Key principles of structural design relevant to waterfronts
 - Introduction to regulatory frameworks and permitting processes

Day 2: Site Assessment and Environmental Considerations

- **Morning Session**
 - Techniques for site assessment: geotechnical investigations and surveys
 - Understanding environmental impacts and mitigation strategies

- **Afternoon Session**
 - Case studies of successful waterfront projects and lessons learned
 - Group activity: Assessing a hypothetical waterfront site

Day 3: Design Methodologies and Structural Analysis

- **Morning Session**
 - Overview of design methodologies for waterfront structures
 - Fundamentals of structural analysis: loads, forces, and material behavior
- **Afternoon Session**
 - Hands-on workshop: Using design software for structural analysis
 - Peer review of analysis results and design considerations

Day 4: Material Selection and Construction Techniques

- **Morning Session**
 - Criteria for selecting materials for waterfront structures (concrete, steel, composites)
 - Understanding construction techniques specific to waterfront applications
- **Afternoon Session**
 - Group activity: Developing a material selection plan for a waterfront project
 - Discussion on challenges and solutions in construction

Day 5: Sustainability and Future Trends

- **Morning Session**
 - Principles of sustainable design in waterfront development
 - Exploring innovative technologies and materials in waterfront engineering
- **Afternoon Session**
 - Group presentations of project designs and evaluations
 - Feedback session and discussion on future trends in waterfront design
 - Conclusion and distribution of certificates of completion

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test

- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Certificate:

International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

Course Fees:

To be advised as per course locations. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session