

## Riverine Flood Modelling with MIKE FLOOD Integrated 1D (MIKE 11) and 2D (MIKE 21) River Flood Modelling



### Introduction

River and coastal flooding often occurs as results of river overflow, high rainfall intensity in the catchment area, dam/dike breach, ocean storm surge or as a combination of these phenomena. The risks of flooding are amplified by the expected effects of climate change.

MIKE FLOOD is a comprehensive modelling package covering all the major aspects of flood modelling and a tool available for understanding river and coastal flooding, analysing scenarios and testing mitigation measures. MIKE FLOOD integrates flood plains, streets, rivers, coastal areas and sewer/storm water systems into one package by integrating the 1D river model (MIKE 11) and 2D overland flow model (MIKE 21).

The main topic of this three-day course is riverine flood modelling by coupling of the 1D river model (MIKE 11) and 2D overland flow model (MIKE 21) components to simulate the fully integrated flow dynamics between main rivers and surrounding flood plain areas. Included in the course are introductions to the capabilities and potentialities of the Flood model components as well as hands-on exercises to become familiar with the User Interface of MIKE FLOOD model components.

### Course topics

- Introduction to MIKE 11
- Understanding data requirements for model build and application
- Working with river model input data in MIKE 11 Graphical User
- Introduction to 2D overland flow modelling with MIKE 21
- Building bathymetries
- Running simulations
- MIKE FLOOD graphical editor
- Coupling of 1D and 2D models
- Stability and Calibration issues
- Tips and troubleshooting with model coupling
- Results viewing and presentation
- Detailed walk-through of MIKE FLOOD model examples
- Hands-on exercises

### Target group

Professionals involved in river modelling, flood management or other flood related studies who wish to obtain knowledge of the theoretical and practical aspects of combined 1D and 2D flood modelling.

### Dates and time

Wednesday 23 May - Friday 25 May 2012.  
Courses start at 09:00 and finish at 16:30

### Location and venue

Istanbul Technical University, Civil Engineering Faculty, Civil Engineering Department, Hydraulics Lab., Maslak, 34469, Istanbul, Turkey. Please see map attached.

### Language

Lectures and training material are in English

### This is included in course fee

- Lectures and hand-on exercises
- The latest MIKE by DHI demo version
- Training material
- Lunch and refreshments
- MIKE by DHI Training Certificate

### Further information, course fees and registration

Please contact Dr. Tarkan Erdik,  
Course Coordinator: [info@mvtenerji.com](mailto:info@mvtenerji.com)

## Course overview Wednesday 23 May - Friday 25 May 2012

### Wednesday 23 May 2012 - Day 1

**Key subjects: Course Introduction, River modelling with MIKE 11**

Morning:

- General Intro - Welcome and course overview
- MIKE 11 - Introduction to MIKE 11 and the MIKE Zero User Interface  
- Model definition and River modelling with MIKE 11

Afternoon:

- MIKE 11 - Model definition and River modelling with MIKE 11, cont.  
- MIKE 11 Hands-on Exercises
- Q/A. Follow-up on days program and exercises

### Wednesday 24 May 2012 - Day 2

**Key subjects: 2D surface Flow Modelling with MIKE 21, Bathymetries**

Morning:

- MIKE 21 - Introduction to MIKE 21 for 2D Surface modelling  
- Introduction to Bathymetry Editor and Grid Editor  
- MIKE 21 Flow Model (GUI)

Afternoon:

- MIKE 21 - Result Viewing (2D results)-  
- Hands-on Exercises on MIKE 21 Flow Modelling
- Q/A. Follow-up on days program and exercises

### Thursday 25 May 2012 - Day 3

**Key subjects: Riverine flood modelling with MIKE FLOOD, Linkage Options**

Morning:

- MIKE FLOOD - MIKE FLOOD GUI  
- MIKE FLOOD Linkage options  
- Walk-through MIKE FLOOD Demo Examples

Afternoon:

- MIKE FLOOD - Hands-on Exercises on MIKE FLOOD Modelling  
- Tips and tricks on flood modelling
- Course completion and evaluation

## COURSE VENUE AND LOCATION

Riverine Flood Modelling with MIKE FLOOD,  
Wednesday 23 May - Friday 25 May 2012

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Civil Engineering Department, Hydraulics Lab.,  
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## TECHNICAL UNIVERSITY OF ISTANBUL

